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FEBRUARY 6, 1942.

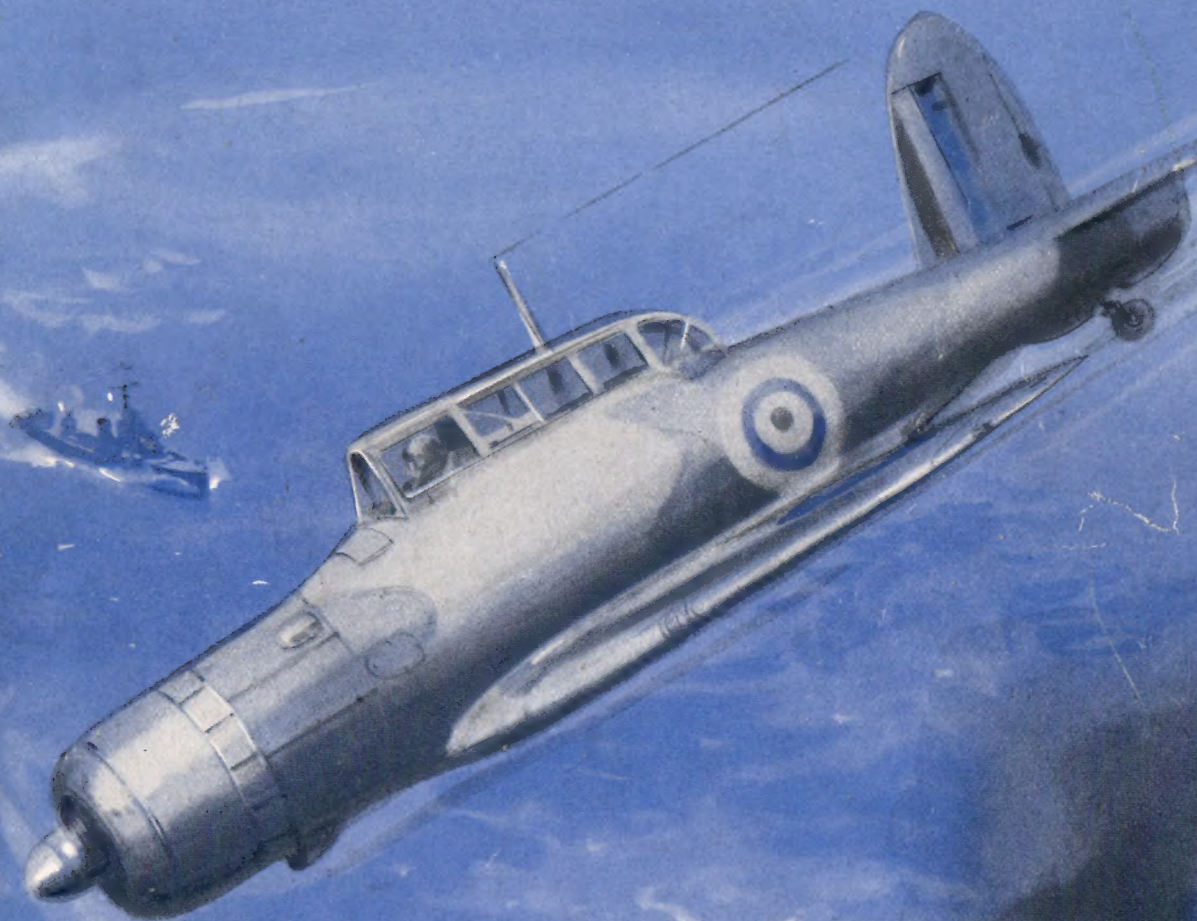
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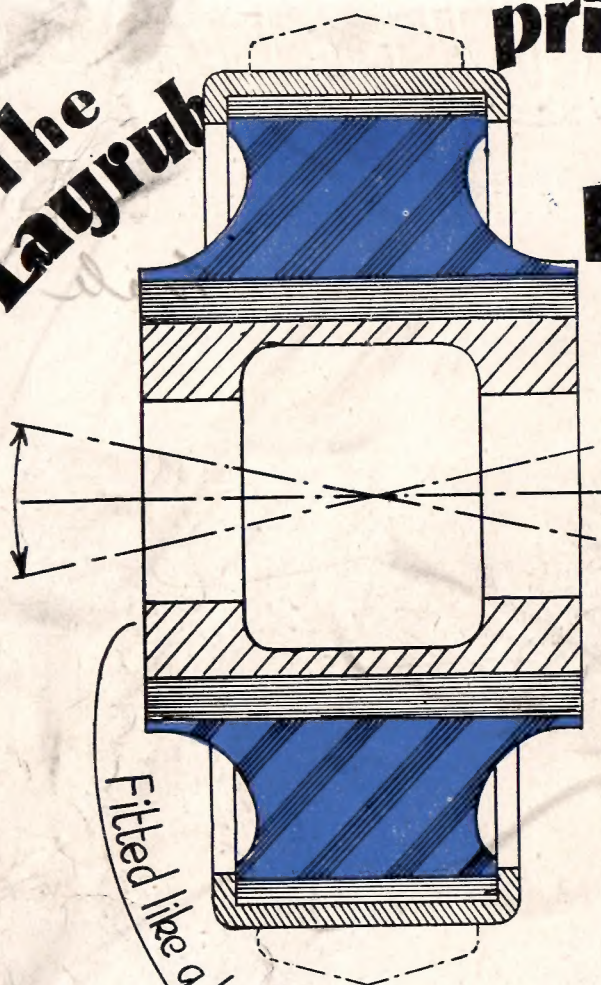
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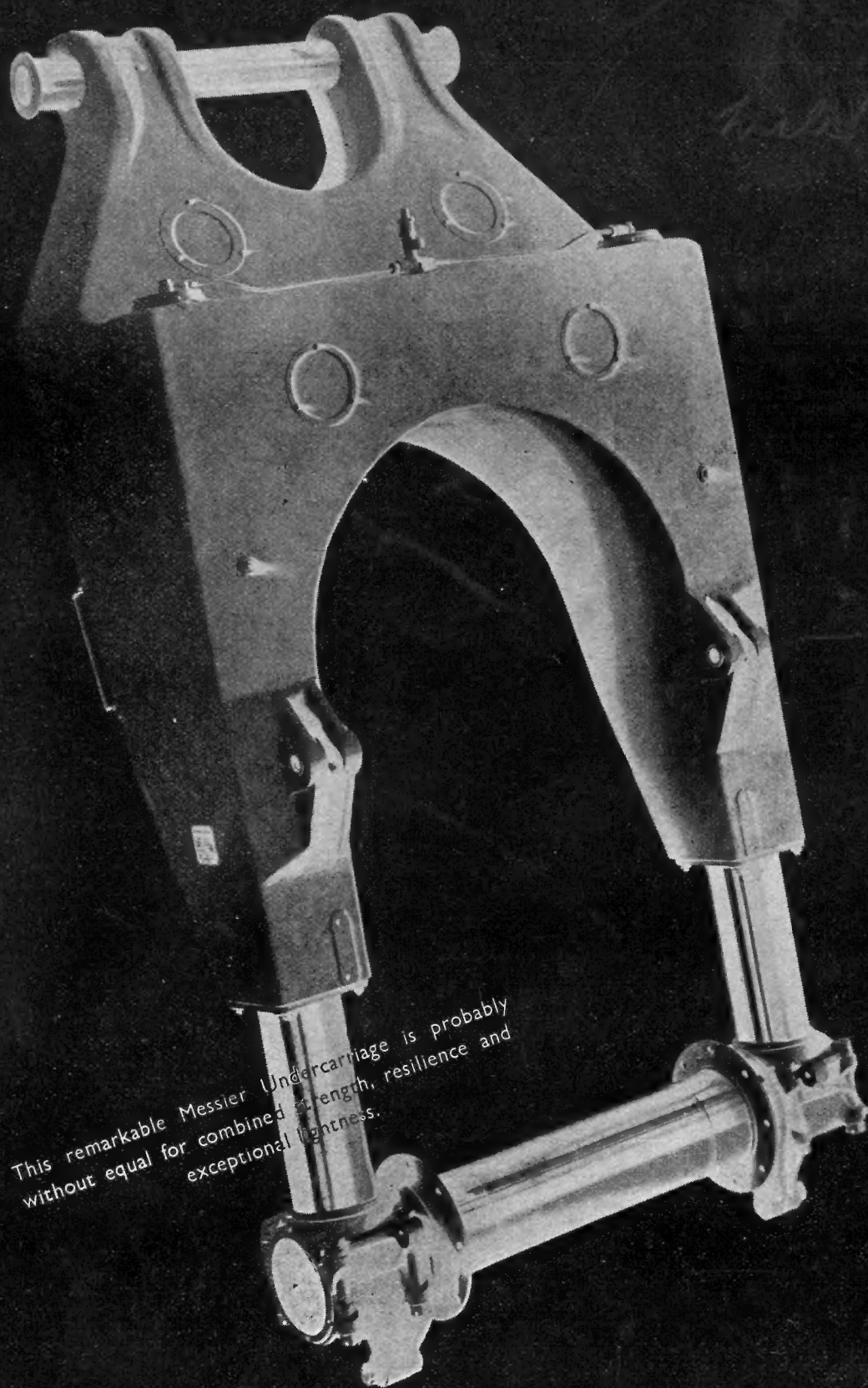


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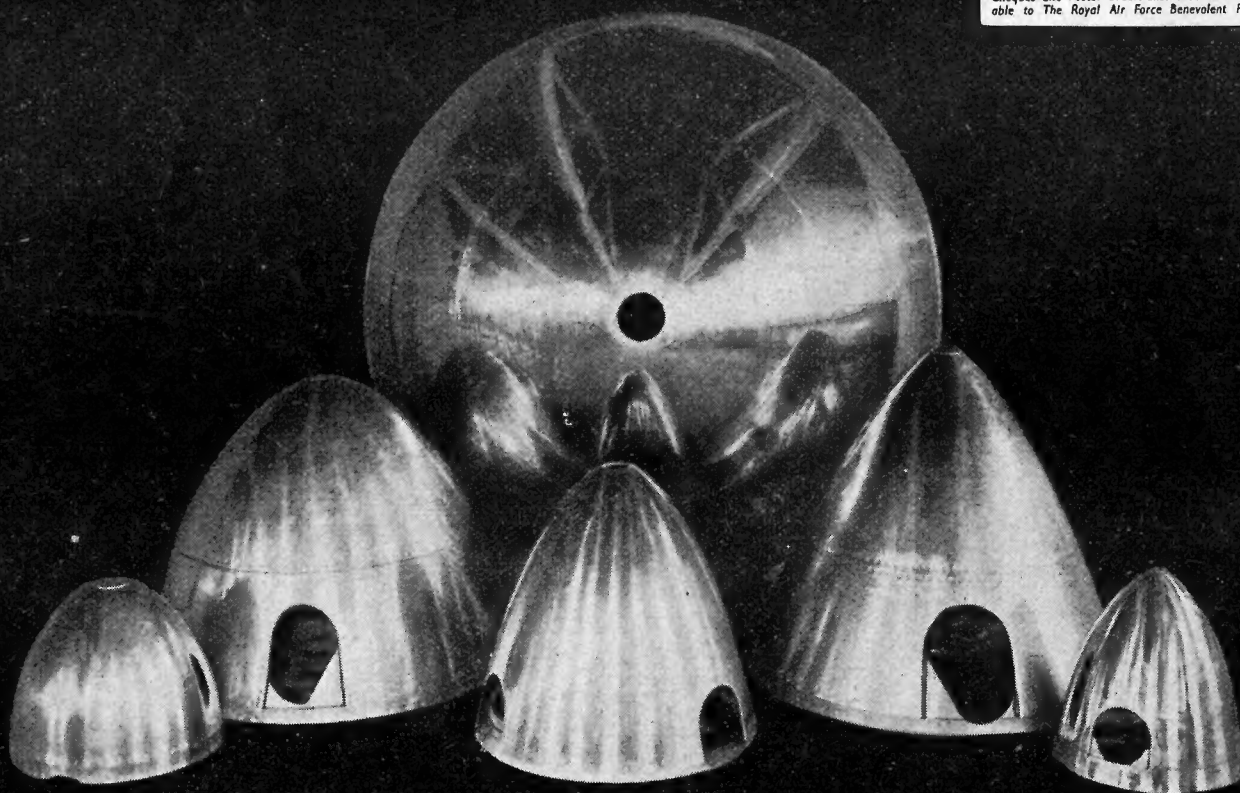


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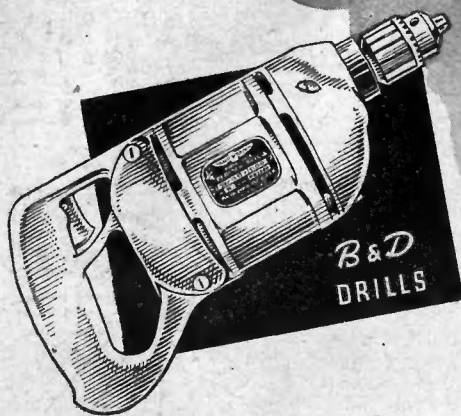
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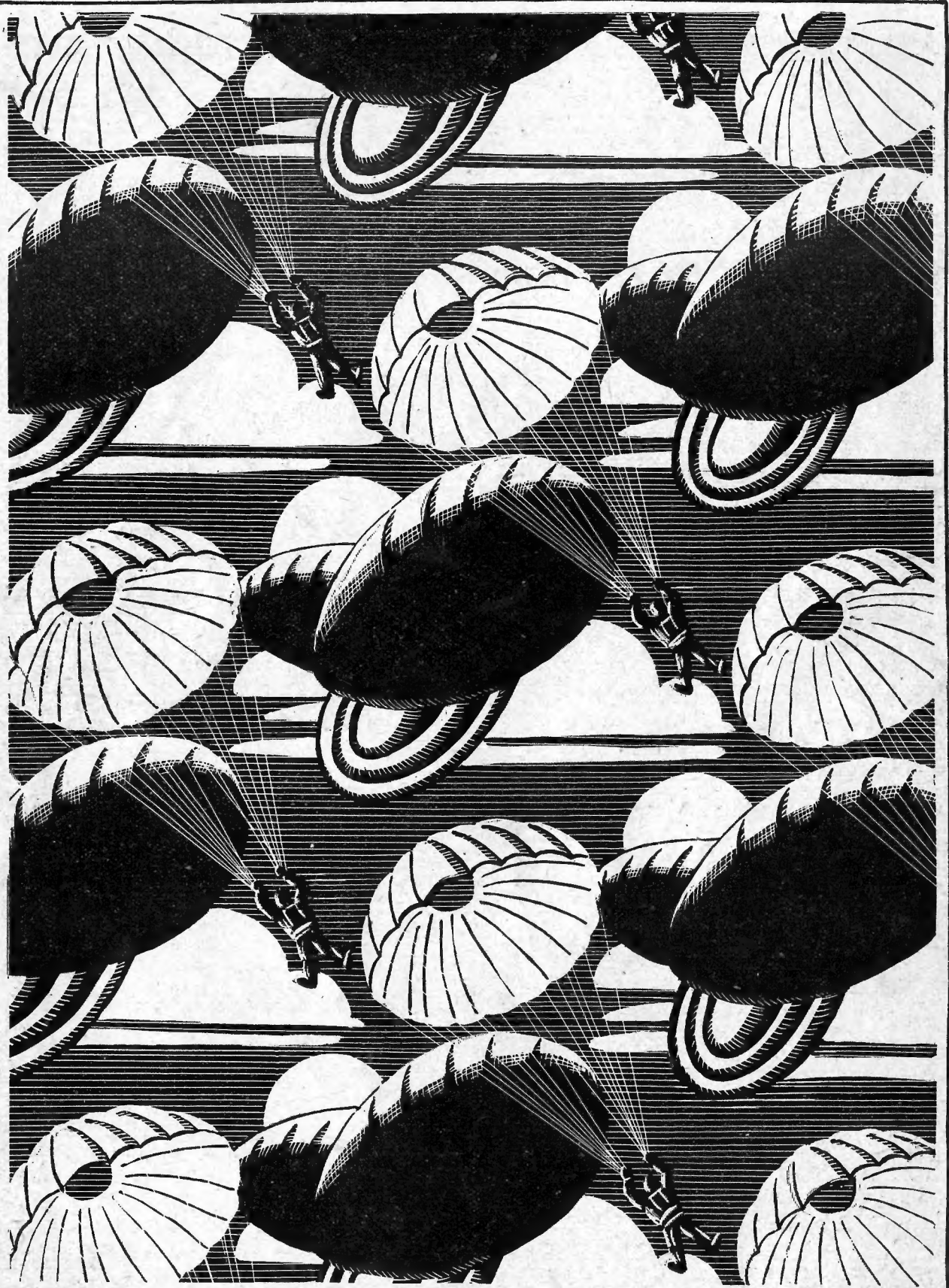
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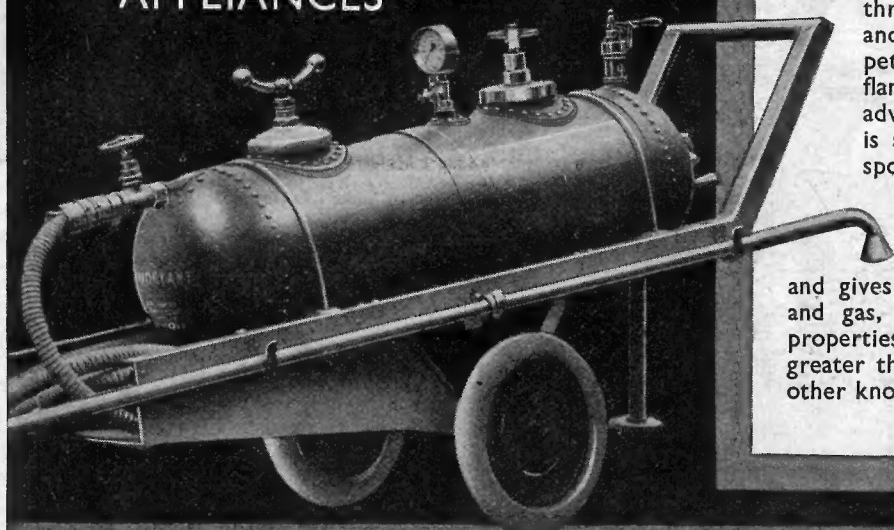


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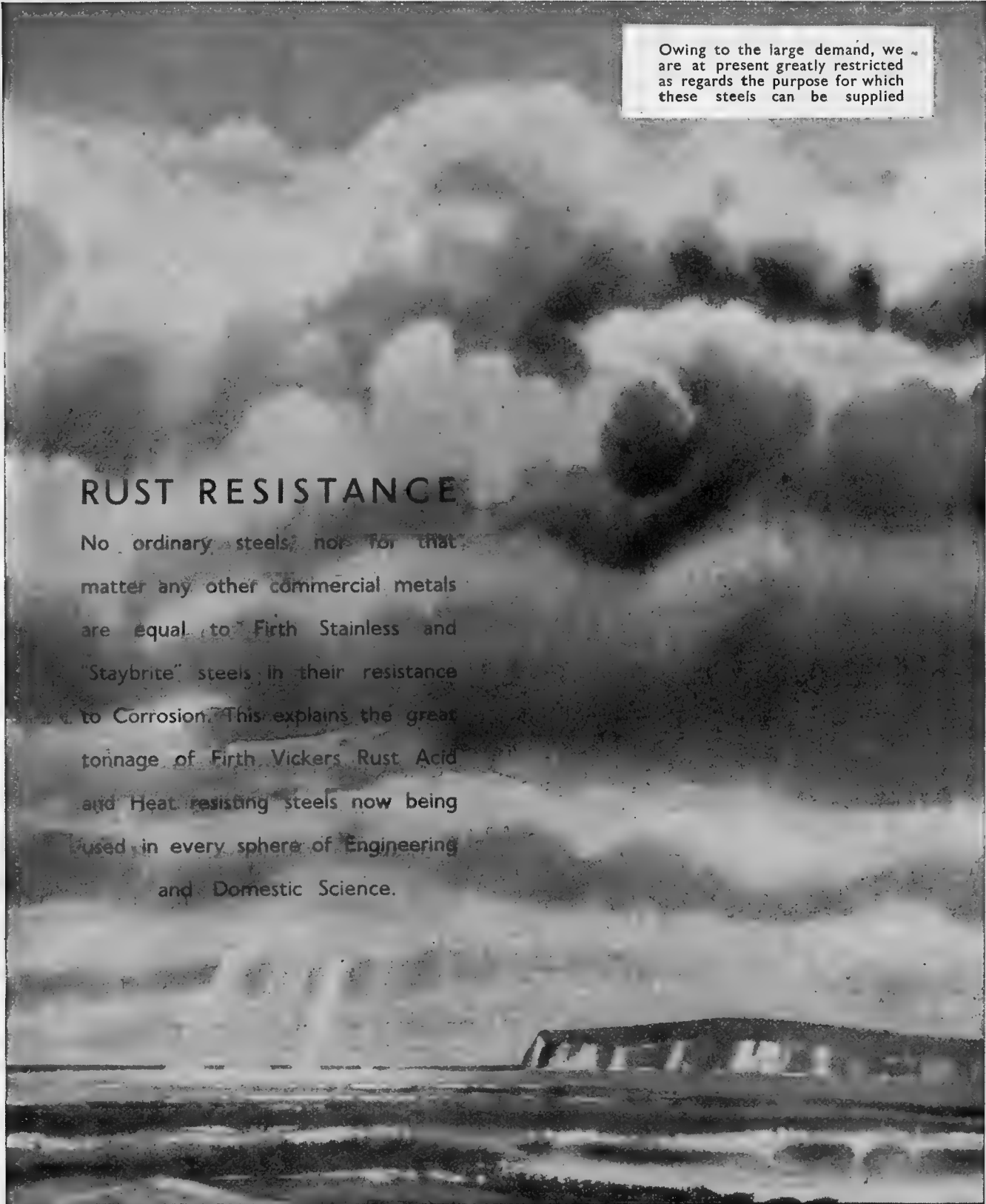
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MATTERS OF MOMENT

Concentration and Speed

AN EBBING TIDE in Libya, coinciding last week with the retreat of the British from the Malayan peninsula to the island of Singapore, served as a reminder, to such as needed it, of the advantage which has lain with the well-armed offensive throughout this War. Defensive strategy has come to represent not merely a confession but an almost invariable consequence of relative weakness. Wherever the aggressor Powers have struck—in China, Norway, the Low Countries, Russia and the Pacific—they were able to count on a weakness which bore no relation to the potential strength of their victims. The end of that phase is in sight. Arms, aeroplanes, ships and men will soon be ready in offensive quantities. Yet, when the Allies are armed for offence, they will suffer from the strategic handicaps imposed in the geographical sense by their losses.

Bases on which the British relied have been lost everywhere but in the Near and Middle East. Bases, which were the foundation of United States Naval strategy, have been lost in the Far East. China has been forced back and is nearly hemmed in. Russia was pressed far back and has still to recover her full control of the Black Sea. When the Forces of Great Britain and the United States move, they will be faced at every point but two with the need to undertake invasion by sea or air. Their armies cannot be flung, like those of Russia, through gaps bored by tanks and aeroplanes except in Burma or China by way of Russia. Elsewhere they must make landings, convoyed in the open seas by the Navy and protected in the narrow seas and on the beaches by the Air Force.

Accelerations on Old Themes

In general character, the operations which face the might of the free peoples are much like those to which they brought their perseverance, courage and ingenuity in their formative days. They will have to fight their way over the seas, force their way ashore and then drive deep in among their enemies, with or without the goodwill of the natives. If they have ample strength, the task may still be difficult, as the Russians have found in the Crimea; it may be costly, as witness the losses of the Japanese in the Strait of Macassar and the sacrifices of the Germans in Crete, yet evidently it can be done, even in the face of heavy naval and air opposition, as last week's German success in North Africa testifies. The principle is the old one of concentration backed by the equally old principle of speed and continuous pressure. Mechanical warfare has not altered in essence the principles of offensive operations; it has simply altered the time factor.

The new unity among the Allies seems to acknowledge these things and to aim at applying them fundamentally. The pooling of raw materials brings the principle of concentration back into the field of production. The unifica-

tion of commands applies the idea of concentration in the various theatres of war. And the arrival of American troops in Northern Ireland, together with the assurance of Mr. Churchill and Mr. Roosevelt that United States air units will shortly be opposing the Germans, show the plan in somewhat surprising fulfilment. There may have been a tendency in the United States if not in Great Britain to ask why American strength should be devoted to Europe while so many United States interests are threatened in the Far East. This is not the time to offer a complete explanation, but some of the reasons present themselves readily.

Dispersion for Economy in Time

Like Great Britain, the United States has to determine how her Forces can be most effectively employed in their present limited strength while her bigger expeditionary forces are in preparation. Some are obviously needed for holding forces in certain parts of the Far East. Those may have arrived by now. The others can serve their apprenticeship to modern war by standing forthwith among those who have had most experience of it in the theatre where it has developed its greatest intensity. They may begin by releasing British troops immediately for employment in offensive operations and may end by sharing in offensive work in the West such as the Allies cannot expect quickly to undertake in the Far East. What at first appears to be a dispersion of strength thus presents itself as a form of time economy designed to accelerate offensive plans in the theatres of war where their preparation is most advanced.

Great Britain at the present juncture fulfils for the United States the part which France under the old alliance played for Great Britain. The armies stand ready on British soil like once they stood ready in France as a focus for British strength as it came to be developed. France was the spring-board then. Great Britain is the forward base now. Just as British troops once came under the supreme command of a French general, so United States troops are passing under the direction of a British commander-in-chief. Strategy then was concerted between the Allies; as Mr. Churchill has explained, strategy is concerted now. And Europe plainly is regarded as riper for offensive strategy than the Far East. Both tasks are to be thoroughly undertaken. To the one which is nearest accomplishment, the United States adds what weight it can. Its effort is apportioned Eastwards and Westwards on an obvious assumption. That assumption undoubtedly concerns Russia.

Russia is known to distrust Japan. Russia's steady support of the Chinese is proof of her interest in restraining the greed of the Japanese. Russia is reported to have announced the discovery of a map outlining the "limits" of Japanese aggrandisement. The "limits" included



BATTLE TRAINER.—The Fairey Battle (one 1,030 h.p. Merlin II motor) is no longer in front line service, but modified with double cockpits instead of the original greenhouse it is doing good work as an advanced trainer.

Eastern Siberia. One day, as Sir Stafford Cripps believes, there will be war between Russia and Japan. Anything the Allies can do to free Russia from her engagements in the West would improve the prospect of a Russian decision to settle with Japan while she is spread out like a gigantic octopus over half the Pacific and a slice of Asia. If an offensive in Europe can hasten that day, it would be worth all the diffused concentration the United States cares to undertake now, for it would mean the substitution of the most splendid concentration in the Far East for that

detailed ejection of the Japanese from their conquests which at present seems to confront the Allies. With Russian help the body of the octopus could be attacked and the tentacles could be lopped off at their base.

The concentration of materials and men is in progress. The nations must insist on speed and persistence in their use to match the greatness of the supply plan. Libya may not be the last Allied disappointment, but it ought to be the last in which full success is postponed because the enemy machine worked faster.

The Barking of the Old Dogs

A MISFORTUNE which frequently afflicts the expression of Service opinion in time of war is that the only part of it which can be vocal comes from officers who have finished their service. The agitation against and criticism of the principle of a separate Air Force continues to be fed by the dogs who have had their day. Lacking experience of the team work which can be achieved in these days between the Services, they are apt to assume that unity of direction is impossible without unity of administration and training. By a similar simple faith in their own Services they tend to believe that technical and geographical limitations would be removed by handing over the Air Arm to the more senior Services.

Simple faith may be "more than Norman blood," but it seems to have no more influence on the grey matter within the cranium when the vexed question: "Who should supply the air support?" is raised. Another correspondent of "The Times" has given proof of the old officer's liability to lose touch with the facts of Service affairs in war-time. This time a sailor, signing himself "Commodore of Convoys" backs the Army against the Air Force. He writes:—

"While we see the battle surging in Libya, we note that the only German communiqué thence comes from the German High Command—General Rommel, but the British communiqués come from two sources—from British G.H.Q. and from R.A.F. H.Q. And then we begin to doubt whether two commanders-in-chief in co-operation really form the best arrangement for defeating an enemy general. How is it that the right flank and left flank of the Army, maybe hundreds of miles apart, come under the commander-in-chief, while the upper flank and lower flank, though perhaps only hundreds of feet apart, come under two commanders-in-chief? Can air forces and ground forces, both with the same objective, obtain the greatest mutual benefit when they are under two commanders-in-chief?"

What of the naval co-operation in Libya? Was that, too, under a third commander-in-chief though it was not operating in a third dimension but was in fact covering the Army's right flank? Or was there such an understanding between the three Services that for all practical purposes there was only one commander-in-chief directing the three Services? In their fierce conservatism, old officers of this type take no trouble to seek out any facts which would spoil their case for the destruction of the Royal Air Force. They forget that on occasion the Army has flung accusations at the Navy. They might gain enlightenment if they sought out naval opinion on Army preparations in Malaya. The argument is not as to whether mistakes can infallibly be avoided, but whether, within the circumstances and limitations, air support in the War so far could have been better given by an Army Air Arm than by the Royal Air Force.

The confusion of thought which moves some of the old officers to their outbursts is to be found in the following paragraph from the sailor's letter:—

"Were our men-of-war, round Crete and elsewhere, lost because the fact was not yet understood that no sea force is complete if it merely floats on the sea, and that part of it must be able to take to the air? The same holds good for land forces. A battleship would never be allowed to move without her escort of torpedo boat destroyers against submarines, but we understand that her fighter escort against torpedo bombers can be withdrawn at any time without naval concurrence. Both the danger and the cure were appreciated by many before Crete; and after Crete we were assured that the lesson was learnt."

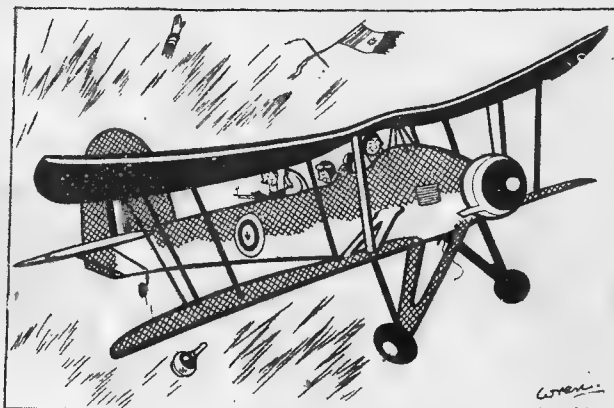
The withdrawal of fighter support as an alternative to leaving fighters on aerodromes they can no longer use would appear to be a wise economy. What would this correspondent recommend as a means of maintaining fighter support when the aircraft carrier to which they

belong has been sunk? The analogy, in relation to fighters based on Crete, is almost precise. The foolishness of these arguments becomes evident when one asks what the Navy could have done to provide itself with fighter protection off Crete if it alone had been responsible for its own air support. It would have had two choices. It could have relied on carrier fighters or it could have put fighters ashore. In the latter event it would have been dependent on the Army, as the R.A.F. was, for the protection of its aerodromes.

Whatever the Army may need in air assistance can be better given by the R.A.F. trained in all forms of air operations and flexible enough to switch quickly from one to another, than by a smaller, specialist Air Arm, which would of necessity tend to put greater weight on tactical support than on strategical. If the Army commander-in-chief wants distant preparation and reconnaissance, close support in battle, help in reinforcing troops, action against supply columns, transport for supplies, he is likely to get it in greater measure from the R.A.F. than he could hope to get from an air cadre attached permanently to his command. His machines are likely also to be better equipped, maintained and supplied, because the R.A.F. has been dealing with those matters for 24 years. His pilots will probably be more carefully and comprehensively trained for work in the air—for the same reason. Those who control them in the R.A.F. will know best how to use them within the framework of his requirements.

An Army Air Arm would still have to cope with the peculiar difficulties of air operation. The Navy meets the same difficulties in using its Air Arm. If the Air Arm within another Service could be made into the absolute and complete shield which the retired officers seem to think possible, the Navy would not have lost any aircraft carriers. And the Navy has lost three aircraft carriers. Let the

ODDENTIFICATION—XLV



*Lots of struts in all directions,
Curved and cut-out centre sections—
Stringbag the Sailor's had his day,
But in his own distinguished way,
He's left his mark on history's page,
The champion of the biplane age!*

Army take the present fine quality of the R.A.F. and the anxiety of its men to help, and let it make all the demands it likes. It will not be disappointed in the result. On the Navy side, we have reason to know how well joint action in the Atlantic has worked. And all the World knows what splendid work the Coastal Command has done; and is doing, against enemy shipping in the narrow seas. The Navy surely would not wish to disturb a successful organization. Only the jealous loyalty of the old sea dogs would wish to reserve all success at sea to the Navy.

The Prince of Wales and the Repulse

MR. CHURCHILL told the House of Commons, on Jan. 29, how the Prince of Wales and the Repulse were lost. He said they had been sent to Singapore in the hope that they would not only act as a deterrent to Japan's entry into the War, but as a deterrent upon the activities of the individual heavy ships of the enemy—with our ships being able to choose their moment to fight. The intention had always been that any big ships sent to the Far East should be accompanied by an aircraft carrier. At that time, with the exception of an aircraft carrier in home waters, all the others were under repair, because of a succession of accidents, some of which were of very slight consequence.

The Prince of Wales and the Repulse arrived at Singapore, but were expected to leave again shortly for secret bases and broad waters.

On Dec. 8, after conferring with the Captain and the Staff Officers, Admiral Sir Tom Philips decided that drastic and urgent naval action was required in view of the movement of Japanese transports with weak fighting escorts towards the Kraai Isthmus. The stake on both sides was high, but had Admiral Philips's action succeeded in its original intention it would have presented the Army with a good prospect of defeating the Japanese landings in Malaya and possibly of paralysing the invasion of Malaya at the very beginning.

Admiral Philips was aware of the risk and took steps for air reconnaissance to see whether there was an enemy aircraft carrier about and for fighter protection up to the limit of the short-range fighters available. Only after he had left harbour was he informed that fighter protection could not be provided in the area in which he intended to operate, but, in view of the low visibility, he decided to go on. Later, in accordance with pre-determined plans, he turned back because the weather began to clear and he knew he had been sighted.

Later still, during his retirement, another Japanese landing more to the South of the peninsula was reported which presented an even greater threat to Malaya, and he decided to investigate this. Returning from this investigation, which had been fruitless, he was attacked, not by torpedo or bomber aeroplanes from an aircraft carrier, but by long-range, shore-based heavy two-motor torpedo-bombers from the main Japanese aerodrome 400 miles away.

In the opinion of the Board of Admiralty the risks which Admiral Philips took were fair and reasonable in the light of the knowledge which he had of the enemy when compared with the very urgent and vital issues at stake.

Ah, well.



FORTRESS PRODUCTION.—Part of the assembly shop at the Boeing Company's works at Seattle. Large numbers of B-17E Fortress II bombers are now in production here and at other works throughout the country.

Mr. Churchill's Flight in the Berwick

CAPN. KELLY ROGERS, who commanded the British Airways Boeing 314-A flying-boat, the *Berwick*, when it brought the Prime Minister back from the United States on Jan. 17, has written an account of the flight. Below we give extracts from his report:—

The flight started from Norfolk, Va. We flew at about 8,000 ft. almost the whole way to Bermuda, which enabled us to fly in still air with a cloudless sky above and cumulus clouds below.

The Prime Minister's questions concerning the operation of the controls and general behaviour of the aeroplane made it clear that he would like to handle it himself. I invited him to do so and he responded immediately. I disengaged the automatic pilot and whispered an instruction in Captain Shakespeare's ear, who was on watch in the co-pilot's seat, to apply only such corrections to the controls as would be necessary, if the aeroplane got beyond the Prime Minister's control. No major correction was necessary. The Prime Minister asked if he could make a couple of slightly banked turns, which he did with considerable success; he was at the controls about twenty minutes altogether and afterwards described the difference between this aeroplane and the one he had flown in 1913.

I would like to say here that at all times the crew responded wonderfully to the calls made upon them, which were many and exacting.

Our departure from Bermuda was without incident; the aeroplane became airborne in less than a minute and conditions indicated a fast flight. A flight plan was calculated from the forecast and gave a probable flight time of 17 hrs. 25 mins. from take-off to touch-down. A very careful analysis of the weather forecast was made, in order to produce a flight plan, and our ability to reach suitable alternative alighting areas was carefully worked out. If in the course of the flight the weather conditions were likely to change from those already forecast, the control stations could supply us with amendments. Actually the forecast proved to be extremely accurate and no amendments were necessary. The accuracy of the forecast was so striking that I had a signal sent to Dr. Macky at Bermuda, congratulating him on his success.

I invited Sir Charles Portal on to the control deck for the take-off and he was impressed by the performance of the aeroplane, particularly as the density altitude on the surface at the time of departure was 1,600 ft. We climbed rapidly to our cruising height and settled down there.

The whole flight was able to be made under standard cruising conditions because of the extra fuel carried and the favourable flight forecast. This was of great advantage because, besides giving a higher air speed, the aeroplane adopted a more comfortable attitude in the air and both results combined to make it more stable for flying through the four cold fronts which the flight forecast showed had to be negotiated.

Lunch was served soon after departure, and though on the previous morning the Prime Minister had breakfasted in his suite he indicated that he would lunch with the other passengers.

Sir Charles Portal and Lord Beaverbrook were very interested in our methods of operation, which, because of the type of work which our civil aircraft are called upon to perform, are different from those of the Royal Air Force. The First Sea Lord took a sailor's interest in the operation of the aeroplane, particularly in the navigational system.

After a sleep the Prime Minister resumed work. He took such an interest in our progress that I had to visit him several times and explain all the details of our progress. Later I improved on this by issuing at intervals of a couple of hours signed bulletins giving the position of the aeroplane at the time

of issue, together with the speed since departure, distance covered, number of hours of fuel remaining, and other notes of interest.

As the flight progressed it was obvious that we were travelling very fast, but it was only possible to take single sun position lines until it was dark. These position lines established at least that we were adhering closely to our track, but shortly after dark, when a star fix was obtained, we found we were 90 miles ahead of the flight plan. This gave a speed of 199 m.p.h. from the start and 207 m.p.h. during the previous hour. The actual distance covered proved to be 2,924 nautical miles or 3,365 statute miles. Except when flying through the cold fronts we flew mainly between two layers of cloud which made the obtaining of astronomical fixes difficult and the greatest credit is due to the navigator, First Officer Buck, for his wonderful accuracy.

Icing conditions were experienced at all times when in cloud or rain, but caused us no embarrassment. As soon as the outside air temperature indicated the possibility of such conditions the carburettors were put on hot air and functioned like that for most of the remainder of the flight. The motors ran beautifully throughout and never gave us a moment's worry. The ice which formed on the leading edges of the wings was easily disposed of from time to time by operating the de-icer boots.

During the evening the Prime Minister and Lord Beaverbrook again visited the control deck. The aeroplane was flying through a brilliantly starlit sky, with the outline of the cloud tops just visible below, and both the Prime Minister and Lord Beaverbrook surprised me by saying that they envied me my job.

As dawn came the sky cleared. The Prime Minister, after a good night's sleep, came up on the control deck at my invitation to see the dawn. Incidentally, while he had been dressing and was about to put on his shoes he mentioned to the steward that they felt cold. The steward took them to the galley, put them in the oven, warmed them to a nice temperature and returned them. The Prime Minister expressed great satisfaction.

All the passengers had gone to bed during the night, except Lord Beaverbrook, who sat up reading the whole time. After watching the dawn the Prime Minister went below and joined the other passengers in a light breakfast before returning to the control deck to watch our landfall on the English coast.

For some hours before dawn we had been receiving weather reports from various places and just as dawn was breaking the report from Plymouth recommended that we should alight there. I agreed and altered course accordingly. No radio bearings had been asked for or received throughout the whole of the flight until fog was encountered, but to make absolutely certain whether we were North or South of our track we requested a bearing. This confirmed our view that we were slightly South, so we reset our course. By this time the Prime Minister was in the co-pilot's seat, Lord Beaverbrook standing behind him. All that was visible was a rolling expanse of fog, so they could not appreciate the fact that we were following a definite plan of action, which was apparent to us by the radio bearings but remained hidden from them. The conditions actually encountered caused me no concern. Before we alighted the Prime Minister left the co-pilot's seat, which was then occupied by Captain Shakespeare, who was acting as Chief Officer.

The flight plan indicated a journey of about 17 hrs. 25 mins. The distance covered was 3,365 statute miles. We had been in the air for 17 hrs. 55 mins. Our estimated time of arrival, as worked out before leaving Bermuda, was in fact fixed at 09.00 hours Greenwich mean time. We touched down at 08.59 hours.



["Aeroplane" photograph

IN TRANSPORT SERVICE.—A Boeing 314-A of British Airways. This machine is the *Bristol*, sister ship of the *Berwick*, in which Mr. Churchill flew back from the United States. A Vickers-Armstrongs Supermarine Walrus is alighting behind.



A MARTIN DEVELOPMENT.—The Russian DB-3 medium bomber.

German Aeroplanes in Detail

TECHNICALLY and numerically the Royal Air Force is now in a more advantageous position in relation to the Luftwaffe than it has been at any time since the War began. Our strength in numbers is of necessity spread over almost the whole World, yet aeroplane for aeroplane we are superior on every front.

That fact is emphasised by the summary of data on three German aeroplanes elsewhere in this issue. Much of that data has been supplied by the Ministry of Aircraft Production from an analysis of captured machines. We hope to publish the information in more detail in the following weeks as soon as we can sort out the hard facts from the mass of miscellaneous information presented, and assemble them in a logical order from which general conclusions can be drawn.

Information on flying trials is given for the first time among the reports and affords especially interesting comparisons with similar British and American aeroplanes.

The Me 109E, the Me 109F and the Ju 88A6 are the three aeroplanes dealt with so far. The He 111K5A, the Me 110, the Fiat C.R.42 and the Dornier Do 217 remain and, we trust, will be explored in still greater detail.

All the German aeroplanes are well built and have many excellent features, particularly in detail. We should be foolish to underrate them, but we should be even more foolish to believe them to be better than they are. Given even odds in any battle we can thrash the Luftwaffe with British and American aircraft. It is a pleasure in store.

New Swedish Light Bomber

A NEW TYPE of light bomber, designed and built in Sweden, is being supplied to the Swedish Air Force. The new bomber is a single-motor, two-seat mid-wing monoplane which can be used as either a dive bomber or for reconnaissance. It is armed with both fixed and movable machine-guns and can be fitted with wheels, skis or floats.

Sweden has recently opened a new Aeronautical Experimental Institute which is completely equipped for aeronautical research, including facilities for performance tests of strength with complete aeroplanes. Two wind-tunnels of American type have been installed for testing models. One is a horizontal tunnel with a diameter varying from 10 ft. to 23 ft. and a fan power of between 1,000 h.p. and 1,300 h.p., in which a wind speed of more than 200 m.p.h. can be attained. The second tunnel is for studying the spinning qualities of the models.

The Aircrew Company

HALF the employees of The Aircrew Company assembled for a "beano" on Jan. 31, with their wives and friends in

the hall in the canteen intended for dancing, cinema shows, and theatrical productions. The other half had already been entertained on Jan. 3 in the same fine hall, and this division of the Staff into sections may convey some impression of the expansion, which has taken place, to those friends of the Company who are acquainted with the ample proportions and admirable equipment of what may be called the social annexe of the works.

If the Company was the host, the employees were the organisers of the party. Their own committee "ran" the entertainment with the same skill in choosing and mixing the ingredients of amusement and hospitality, which is probably responsible for the financial success of the firm's Social Club. They provided a cabaret of the highest quality. They had a dance band which might have inveigled dancers on to a much less glassy floor. They put up games of the right kind in judicious quantities. And they saw that there was food enough to keep the energy of the guests replenished.

Two of the Directors—Mr. J. D. Titler (Chairman) and Dr. H. C. Watts (Chief Designer)—joined in the fun and interposed long enough just to tell the employees that they thought well of them and to urge them to develop still more the principle of self-help under the benevolent supervision of the company on the social side. To the visitor the gathering presented that most healthy appearance of a firm swollen far beyond its original proportions without losing the family spirit and the mutual regard of comrades engaged on valuable work.



THE WANDERER'S RETURN.—A Vought-Sikorsky OS2U-1 Kingfisher I two-seat observation seaplane (450 h.p. Pratt and Whitney Wasp Junior motor) is hauled in by the ground crew at the Cape May, N.J., Naval Station after a practice reconnaissance flight. The pilot and observer stand on the wing.

The 126th Week of

THE WAR IN THE AIR

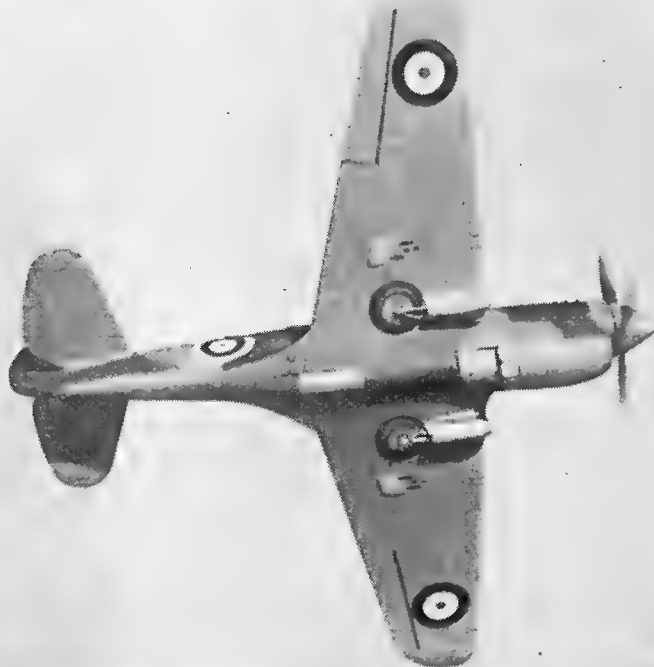
SINGAPORE'S defence must depend for its success chiefly on its air strength. It must be a Battle of Britain in miniature. Already we hear of encouraging reinforcements, most of them apparently Hawker Hurricanes. If they can beat off the daylight attacks and can harass the attempts at landing by the enemy, then Singapore may be saved.

Unfortunately, the weakness of the defence lies in too few aerodromes and a scanty water supply now that the main pipeline from the mainland is cut. The enemy is certain to concentrate his efforts against both these objectives. The chief R.A.F. aerodrome is at Seletar, near the Naval base on the landward side of the island and within two miles of the Japanese lines. It is thus within direct range of field guns on the shore, and unless the guns from the Naval base can keep the Japanese at a distance it must become untenable. The R.A.F. station at Tengah on Singapore Island is less vulnerable because it is on the south coast.

At Kallong, Singapore has one of the largest civil airports in the World, fortunately on the seaward side of the island near the city itself. With a diameter of 1,000 yds. it should prove very difficult to put out of action except by a landing. If our fighters are numerous enough to put up an adequate air defence by day, then night bombing is likely to be the gravest menace.

From a military point of view, the defence of Singapore presents the most complex tactical problems. Whether we hold it or lose it, the value of the Naval base no longer exists. The harbour is sterilised until such time as the Japanese are flung out of Southern Malaya. When that happens the War in the Far East will be won—so it will have to be won without Singapore.

Elsewhere the chief events of the week have been the advance of the Russians all along the front and the advance by Rommel in Africa, despite our air superiority. Germany faces a desperate situation on her Eastern front.



A DESERT HAWK.—Large numbers of American aeroplanes are now operating in the East. They include the new Curtiss Kittyhawk single-seat fighters, one of which is seen in a vertical bank over the Western Desert.

The most critical sector of all, in view of future developments, is the Southern part from the Sea of Azov, West of Rostov, to Kharkov. There can be little doubt that the enemy has concentrated his best troops along this sector and has plans for a drive through to the Caucasus in the Spring. Much depends on the progress Marshal Timoshenko can make in the Ukraine during the next month.

The most encouraging feature of all is the air superiority which the Russians have established along the whole front. The Luftwaffe has taken a tremendous beating against the Red Air Fleet and, at the moment, appears to be in poor shape to organise air support on a large scale during a prolonged Spring offensive. That fact may well turn out to be a decisive point in the War.

Nevertheless, Rommel has shown that air superiority can be ignored on occasion by bold use of mechanised land forces. His rapid advance in Libya suggests that our Eighth Army in the Middle East has been weakened to send help to the Far East, just as General Wavell's Army was weakened to send a force to Greece a year ago. Our resources are stretched to the limit, yet a further retreat in Libya will imply serious mismanagement of affairs.

The most disappointing aspects are, first, that the Navy and the Air Forces have not been able to prevent reinforcements from reaching the enemy at Tripoli—although there is a suspicion that some may have come through Tunisia—and, second, that the Air Forces, with air ascendancy, have not been able to break up the enemy's columns as they advance. What we want is the land equivalent of the air-launched torpedo to knock out the land battleships as effectively as the sea battleships can be disposed of from the air. We shall have to revise our ideas of the size of cannon to be carried by aeroplanes and decide to mount on our aeroplanes the largest anti-tank weapons. Although the tank may be designed to fight the tank, the job can be done more effectively and more economically from the air when, and if, we have the necessary weapons. Even a 37 mm. cannon is far too small to-day. The Russians appear to have found one secret of success in a form of rocket-fired bomb. We can learn from them.



[“Aeroplanes” photograph]
NIGHT FIGHTER.—A Boulton Paul Defiant in its dead-black paint for night fighting.

Retreat to Singapore

OUT-NUMBERED on the ground and belaboured without respite from the air, the last of the defenders of Malaya crossed the Johore Causeway and joined the garrison of Singapore Island. Their crossing was made on Jan. 31; afterwards the Causeway was broken in a combined operation by the Navy and Royal Air Force, and Singapore entered upon a state of siege.

The conquest of Malaya had taken the Japanese 55 days. At only one point and for only a short time were they checked in their advance. The defenders could do little more than fight delaying actions as they retreated, and their task was made doubly difficult by the comparative freedom the enemy enjoyed on the seas and in the air, and their own lack of naval and air support. Exploiting their advantages, the enemy were able to make coastal landings at strategic points, often behind the positions held by the defenders.

Though Singapore is probably more strongly garrisoned than was Hong Kong the Japanese hold a measure of air superiority over the island which will not be easily wrested from them. Their preponderance in the air, their experience in the taking of Hong Kong, and the island's loss of its main water supply (which formerly flowed in from the Malayan mainland across the Johore Causeway), give the enemy every prospect of success in their assault on Singapore. But the island may yet prove as difficult of conquest as Luzon in the Philippines.

The last stages of retreat through Johore State were the signal for an intensification of Japanese raids on Singapore, and formations of bombers escorted by fighters began to appear three and four times a day. According to Japanese reports, the greater part of the raids were directed against the aerodromes.

At the same time, the Japanese began to invade the Dutch island of Ambon (Amboina), between Celebes and New Guinea, and the site of the second largest Dutch naval base in the East Indies. The attack was not unexpected and the authorities, though determined to resist invasion, at once put into effect a scheme of wholesale destruction which had previously been drawn up and carefully rehearsed. The wrecking was even more thorough than at Tarakan, which the Japanese found almost useless when they arrived. Fierce fighting occurred when the invasion began.

Japanese bombers were also active over other parts of the Dutch East Indies, making small and sporadic raids apparently without plan or purpose. Among the places bombed were Macassar, Pontianak, Belawan, Padang, Parepare, (on the South-West coast of Celebes), Tanjong, and Pinang (in the Riouw Archipelago). Further Japanese landings were made at Balikpapan (on the South-East coast of Borneo) and at Kendari on the South-East arm of Celebes.

More successes were made by the Japanese in Burma, where they forced the British to withdraw from Moulmein on Jan. 31. In the Bismarck Archipelago they landed another 10,000 men at Rabaul (New Britain), strengthened their hold on the Solomon Islands, and made further raids on New Guinea. In Luzon they made little headway against the superb defence of the American and Filipino army on the Bataan Peninsula, but



THE DIVER.—The wreckage of a Japanese dive bomber shot down during the attack on Pearl Harbour on Dec. 7. Dive brakes can be seen under the leading-edge of the wing outboard of the inwards retracting undercarriage. The machine was salvaged from the harbour.

dropped leaflets inviting General MacArthur to surrender "to save further bloodshed." During the week two Curtiss P-40 fighters mysteriously appeared over Luzon, shot down two Japanese dive bombers and damaged a third, and then as mysteriously disappeared.

Japan's attempt to force a convoy, said to contain 100 ships, through the Macassar Strait, brought about her most serious reverse since the War began. For five days the convoy was hammered by American and Dutch bombers and by American warships and when the attack was finally broken off, some 33 ships, including an aircraft carrier, a battleship, two cruisers and a destroyer were reported to have been sunk or disabled. These figures include those reported in the previous week covering the first two days of the attack. The Japanese admitted the loss of four transports.

Bombers and fighters of the Allied Air Forces in the Far East were also active. Kutching (Sarawak) was bombed by the Dutch; Rabaul was twice raided by the Royal Australian Air Force; the aerodromes at Kuala Lumpur and Kuantan (Malaya) were bombed by the Royal Air Force, which also left a 600-ton ship listing off the River Muar and scored one direct hit on an enemy cruiser and 12 direct hits on a troop transport, blew up a stores dump on the beach, machine-gunned and bombed landing craft, and shot down 12 enemy fighters during a Japanese landing at Endau. The Japanese communiqué reporting the action at Endau stated that 50 R.A.F. aeroplanes had been shot down for the loss of one Japanese—a normal Axis claim after a bad defeat. The British communiqué failed to mention the scale of the R.A.F.'s losses.



RUSSIAN DIVE BOMBER.—The SB-RK two-motor dive bomber of the Red Air Fleet, a development of the SB-3 with two 1,100 h.p. M-105 motors. The dive brakes can be seen under the wings.



REWARD OF TREACHERY.—A Japanese Nakajima 96-2 single-seat fighter going down in flames over Pearl Harbour on December 7 after being hit by A.A. fire.

Raids and attempted raids on Rangoon were frequent. Most were intercepted and on one occasion seven of a formation of 30 were definitely destroyed, with six more logged as probables. Earlier, pilots of the American Volunteer Group had shot down three and probably two more, and later the A.V.G. and R.A.F. between them accounted for 12 raiders. Hurricanes were reported in action for the first time on the Burma front during the week. Bristol Blenheims made a heavy and successful raid on the dock area of Bangkok.

Warships and aeroplanes of the United States Pacific fleet attacked Japanese naval air bases on the Marshall and Gilbert

TOTAL LOSSES IN THE AIR WAR* (To dawn, February 1).

	Axis Air Forces	Imperial Air Forces
Machines destroyed in combat or by A.A. gunfire	7,821	4,060
Personnel	21,358	11,544

* Excluding Russia and the Far East.

Islands, sinking fleet auxiliaries and destroying many aeroplanes in the air and on the ground. The Americans lost 11 machines.

Communiqués and agency messages from the many localities in which the Japanese Air Forces operated reported the certain destruction of 44 enemy aeroplanes during the week. Of these, about 13 were accounted for by the defences of Singapore and 22 by the R.A.F. and American Volunteer Group in Burma. The total number destroyed by the defences of Singapore since the War began was stated to be 60 and that by the R.A.F. and the A.V.G. in Burma 110.

The Near East

Allied losses in the Far East had an echo in Libya. How much the one owed to the other may not be known until the

War ends, but the loss of Benghazi to General Rommel's men seems to have had its cause more in an imperfect knowledge of the enemy's strength than in any serious weakening of the Eighth Army by withdrawals for the Far East. The velocity at which the enemy moved and the strength of his columns apparently created a confused battle scene similar to that which developed when the campaign opened last November, and the Germans evidently profited rather than lost by the confusion.

Benghazi fell again on Jan. 29 and to mark the occasion the German High Command promoted Rommel from General to Colonel-General. The German commander accomplished his task without command of the local air and in face of sustained and concentrated attacks by the Royal Air Force on his lines of communications. Combats between the opposing air forces were few, but there were indications that the enemy again enjoyed a scale of air support greater than that which covered his retreat. The explanation may lie in the enemy's refusal to fight in the air whenever possible and to confine attacks to ground targets.

Heavy losses were inflicted by the Royal Air Force on the enemy's mobile columns in and around the battle area, but though, as a result, the roads and tracks were littered with the burned-out wreckage of numerous lorries, petrol tankers and armoured fighting vehicles, the enemy seemed able to call up replacements as they were needed. Air operations were interfered with, but seldom stopped, by sandstorms on

GERMAN, ITALIAN AND BRITISH LOSSES—JANUARY 25-31, 1942

Date	Axis (N. Europe)		Axis (Near East)		R.A.F. (N. Europe)		R.A.F. (Near East)	
	Machines	Personnel	Machines	Personnel	Machines	Personnel	Machines	Personnel
25-1-42	1	5	6	18	—	—	6	4*
26-1-42	—	—	1	1	5	21	1	1
27-1-42	—	—	2	8	—	—	1	6
28-1-42	—	—	1	4	7	42	2	4
29-1-42	—	—	—	—	1	1	1	1
30-1-42	—	—	—	—	—	—	1	3
31-1-42	—	—	—	—	5	30	1	1
Totals	1	5	10	31	18	94	13	20

* Excludes four pilots saved.

one or two days. Heavy rainstorms, too, hindered flying, and at one aerodrome bogged aeroplanes had to be lifted by ground staffs on to dry runways so that they might be flown off to escape capture.

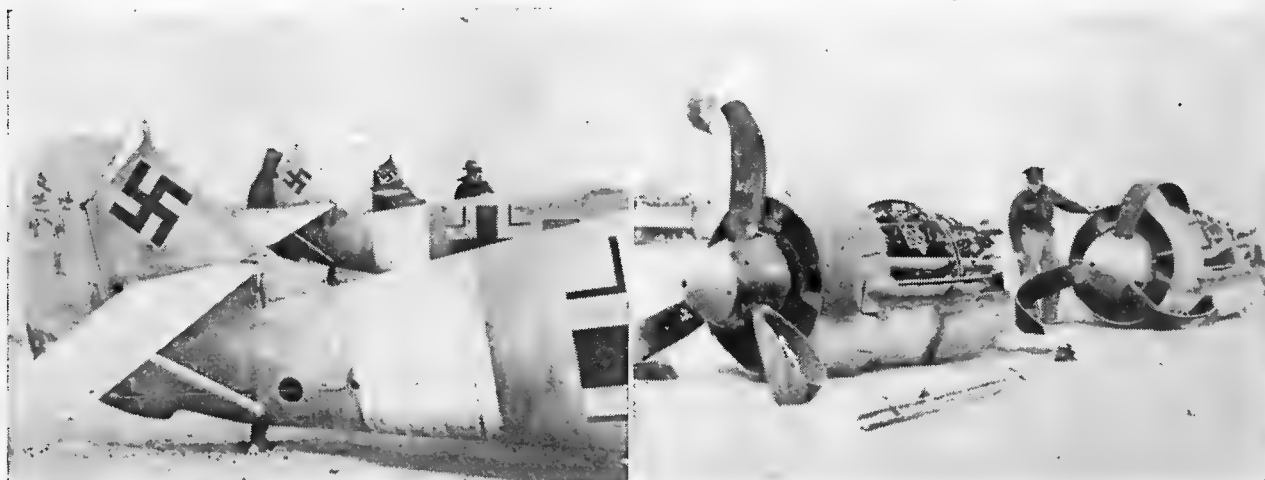
Heavy bombers were less active than usual, but they raided Tripoli and bombed Catania and Comiso (Sicily). Aeroplanes of the Fleet Air Arm made a successful torpedo attack on an enemy tanker in the Central Mediterranean and set it on fire. Later they made a similar attack on two merchant ships.

Enemy losses totalled three fighters (an Me 109, an Me 110 and a Macchi C.200) shot down over the Libyan battlefield, and seven Ju 88 bombers.

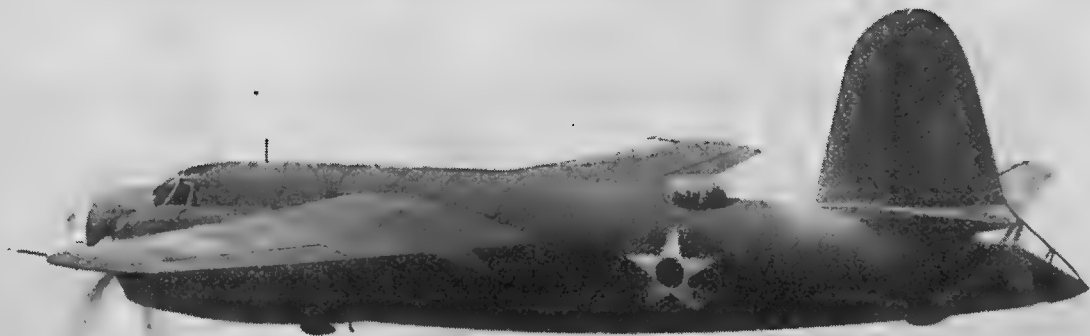
Malta had another long succession of day and night raids.

Russia

The Red Army's offensive gained new momentum last week and brought the Russians to within 37 miles of Dnepropetrovsk, the big industrial town on the Dnieper. They recaptured the important town of Lozovaya (Lozovo), South of Kharkov, and created so grave a threat to Kursk, one of



SPOILS OF THE CHASE.—General Rommel left behind him the wreckage of numerous German aeroplanes during his retreat in North Africa. Here some of the remnants are seen, on the left the tail units of Me 109 fighters, on the right the motors of a Junkers Ju 88.



THE DAY BOMBER.—A Martin B-26 Marauder bomber now in service with the U.S. Army Air Forces and, in modified form, soon to be seen with the R.A.F.

the chain of bases between Kharkov and Vyasna, that the Germans were compelled to meet it with armoured divisions.

No hint was given that the Luftwaffe had been able to challenge the Red Air Fleet's command of the air in most sectors of the front, and the Russian communiqués reported heavy losses of war material by the bombs and bullets of Russian airmen. Some details were also given of the Luftwaffe's losses. A supplementary statement issued with one communiqué read: "From Jan. 18 to 24, the German Air Force lost 126 aeroplanes. Seventy-eight were destroyed in air combat, 14 were shot down by A.A. fire and 34 were destroyed on enemy airfields. Our losses during the same period were 41 aeroplanes."

For the first time, the Kuibishev announcements distinguished between enemy aeroplanes destroyed in combat and those destroyed on aerodromes. The proportion varied, but aerodrome losses were generally higher than combat losses. Incomplete figures for the week reported the destruction of 133 German aeroplanes and the loss of 31 Russian.

Northern Europe

In the rare intervals between storms, aeroplanes of Bomber Command bombed Emden, Hanover and Münster, and paid frequent visits to Brest. Flying to Emden and Hanover, the crews of the British bombers found the Continent firmly

in the grip of Winter. Snow covered the ground from coast to target and on the Zuyder Zee there were patches of ice. Over the target area, strange effects were caused by the combined light of the moon, parachute flares and searchlights reflected on the glistening snow.

Night fighters were active, and two of the raiders had short, sharp encounters, one with a Ju 88 and the other with an Me 110. Both fighters were probably destroyed. The Me 110 was engaged at only 20 yards range. Conditions during the raid on Münster were a combination of dense cloud, heavy thunderstorms and severe icing. One Wellington became uncontrollable and the crew prepared to jump with their parachutes. The front gunner was held prisoner by a defective bulkhead door; almost at the moment of his release, the pilot regained control and the Wellington made a safe return to base with its full crew still on board.

Ample cover encouraged several German bombers, flying singly, to drop bombs in coastal areas of Great Britain during the week. There was some daylight activity by the Luftwaffe over Northern Ireland. Night raids were also few and small and neither casualties nor damage was heavy. One night raider was shot down—the only confirmed Luftwaffe loss reported in Northern European operations.

A summary of the work of the Fighter, Coastal and Bomber Commands of the R.A.F. during the week appears below.

OPERATIONS BY THE FIGHTER, COASTAL AND BOMBER COMMANDS
OF THE R.A.F. From January 25 to 31, 1942

Sunday, January 25

NIGHT ... Main target: Brest. One raider destroyed over Great Britain.

Monday, January 26

DAY ... Patrol of R.A.F. fighters attacked railway station and other targets in Northern France. Two fighters lost from patrol.

NIGHT ... Main targets: Hanover and Emden. Other targets in N.W. Germany also bombed. Another force bombed Brest. Three bombers lost.

Tuesday, January 27

NIGHT ... Main targets: Docks at Brest and Boulogne.

Wednesday, January 28

DAY ... One R.A.F. fighter lost from patrol.

NIGHT 11. Main target: Münster. Docks at Boulogne and Rotterdam and aerodromes in the Low Countries also bombed. Aerodromes in Northern France attacked by aeroplanes of Fighter Command. Six bombers lost.

Thursday, January 29

DAY ... R.A.F. fighters on patrol over Northern France
attacked factory. One fighter lost.

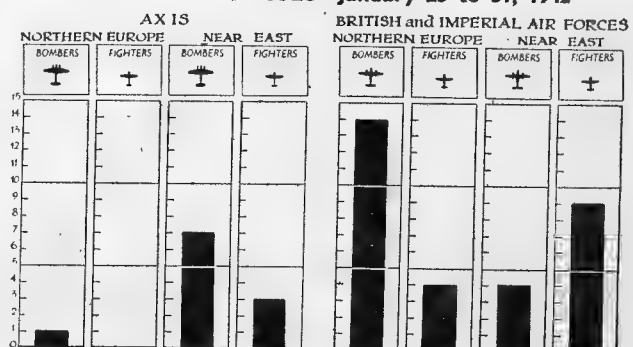
Friday, January 30
Operations cancelled.

Saturday, January 31

DAY ... Hudson of Coastal Command attacked enemy convoy off Dutch Frisian Islands. One aeroplane of Coastal Command lost from patrol.

NIGHT ... Main targets: Docks at Brest, St. Nazaire and Le Havre. Four bombers lost.

THE WEEK'S LOSSES—January 25 to 31, 1942



THE WEEK'S LOSSES AT A GLANCE.—Comparative Axis and British losses in the Air War for the week January 25 to 31, 1942 inclusive. The graph does not include aeroplanes destroyed on the ground or those destroyed in Russia and the Far East. The comparative losses are: Northern Europe: Axis (night offensive) 1 bomber, British (day offensive) 1 bomber and 4 fighters; (night offensive) 13 bombers. Near East: Axis (daylight offensive) 4 bombers and 3 fighters; (night offensive) 3 bombers. British (daylight offensive) 1 bomber and 9 fighters; (night offensive) 3 bombers. Approximate personnel losses suffered by the respective Air Forces were: Northern Europe: Axis, 5; British, 94. Near East: Axis, 31; British, 20.

NEWS OF THE WEEK

UNITED STATES troops arrived in Northern Ireland on Jan. 26. An official announcement from Northern Ireland on Jan. 28 stated that headquarters of the U.S. Armed Forces in the British Isles are being established in England under the Command of Major-General J. E. Chaney. The Chief of Staff is Brigadier Charles Bolte. Major-General Chaney is a pilot and has served as Vice-Chief of the U.S. Air Corps and was for some time at the head of the U.S. Air Defence Command at Mitchell Field. He visited England in 1940 for three months during the Battle of Britain and again in May, 1941, with a number of observers.

United States fighter and bomber squadrons are to take part in the defence of Great Britain and in the ever-increasing offensive against Germany. This statement was made by Mr. Churchill during his opening speech on Jan. 27, of the three-day debate in Parliament. Mr. Winant, the U.S. Ambassador to Great Britain, speaking at a National Defence Public Interest Committee on Jan. 28, said that on Jan. 6 President Roosevelt had told the United States that Americans would take their stations in the British Isles, and sea, land and air forces had already taken those stations.

Lord Beaverbrook is expected to be appointed Minister of Production, and Sir Stafford Cripps is expected to succeed him as Minister of Supply.

Canada may be able to make a noteworthy contribution of both tanks and aeroplanes to Australia. This statement was made by Mr. Mackenzie King on Jan. 28 in the Canadian Parliament during a reference to Australia's requests for help.

The text of three agreements between the Prime Minister and President Roosevelt for the pooling of the entire munition resources and, in principle, the shipping resources of Great Britain and the U.S.A., was published on Jan. 27. Lord Beaverbrook is the representative in London of the Munitions Assignment Board and the Combined Raw Materials Board.

Mr. W. W. Wakefield, M.P., has been appointed Director of the Air Training Corps at the Air Ministry. He served as a flying instructor until April, 1940, when he was placed on the retired list, so that he could become Parliamentary Private Secretary to Capt. Balfour, Under-Secretary of State for Air.

The War

THE SIEGE of Singapore began on Jan. 31. British troops were withdrawn from the mainland in Malaya on the night of Jan. 30 and concentrated on the island of Singapore. The causeway, the only link with the mainland, was breached. On Jan. 28 the evacuation of the North coast area of Singapore Island had been ordered to be completed by Jan. 30. Sir Shenton Thomas, Governor of Singapore, stated on Jan. 31 that reinforcements had arrived during the past few days.

British forces withdrew from Moulmein in Burma on Jan. 31. This gave the Japanese a base on the Indian Ocean.

Benghazi was re-occupied by General Rommel's forces on Jan. 29.



WELCOME TO IRELAND.—Sir Archibald Sinclair, Secretary of State for Air, on the quayside to 'welcome' newly arrived American forces.

Hawker Hurricanes were reported from Australia on Jan. 28 to have arrived at Singapore. There were said to be increasing signs of air co-operation with the Army. Fighters were patrolling the front daily and bombers, escorted by fighters, were making raids on the enemy.

Twelve Japanese aeroplanes were shot down and five others probably destroyed in three attacks on the Rangoon area on Jan. 29. Tomahawks of the American Volunteer Force accounted for eight and the R.A.F. for the other four. There were no Allied losses.

At least 110 Japanese aeroplanes had been shot down by the R.A.F. and American Volunteer Force in air battles in and around Rangoon between Dec. 23 and Jan. 27. At least 50 more had probably been destroyed. Allied losses were four pilots. During a fighter sweep over Burma on Jan. 26 Hawker Hurricanes were said to have been in action over Burma for the first time.

Service News

AIR VICE-MARSHAL ROBERT ALECKIE, Air Member for Training on the Canadian Air Council, has arrived in England to discuss with the Air Ministry and R.C.A.F. Headquarters in London matters connected with the Empire Air Training Scheme in Canada.

R.C.A.F. Headquarters at Ottawa announced on Jan. 31 that the Empire Air Training Scheme was so far ahead of schedule that an extra four weeks was to be added to the course at the Service Flying Training Schools.

Wing Commander R. R. S. Tuck, D.S.O., D.F.C. and two bars, was posted a prisoner of war on Feb. 1. He was reported missing from a patrol on Jan. 28 and, according to the Spitfire pilot who had been patrolling with him, he was last seen going down near Boulogne after his Spitfire had apparently been hit by gunfire. Since his return from the United States, where he went with other R.A.F. pilots to advise

the U.S. Aircraft Industry on R.A.F. requirements, Wing Commander Tuck has been leading a fighter wing.

Plans are being made for Americans serving in the Allied forces to transfer, under certain conditions, to the armed forces of the United States.

The strength of the W.A.A.F. since the beginning of this year has exceeded that of the entire R.A.F. at home and overseas before the War. The women are now employed in 51 R.A.F. trades and the W.A.A.F. is the biggest women's service embodied in a single organisation in the World.

A new battledress has been approved for members of the Royal Observer Corps. It is of blue-grey serge with shoulder straps and belt and is worn with a dark blue beret bearing the R.O.C. metal badge. A circular badge with, in the centre, an eagle surmounted by a crown and the words "Royal Observer Corps" is worn on the left breast of the uniform.

Details of how Lt.-Col. Felix Pijaud, commander of the Free French Lorraine Squadron, met his death have reached London. During the earlier stages of the Allied advance in Libya he led a formation of five Free French Blenheims accompanied by R.A.F. Blenheims and escorted by fighters on a raid on Benghazi. They were attacked by 15 Messerschmitts and Col. Pijaud's Blenheim was badly damaged and crashed in flames. He was badly burned and was taken prisoner. When Allied forces entered Derna some time later they found him in hospital and he was transferred to Alexandria, where he died some days later.

Col. Pijaud was for some time C.-in-C. the Free French Air Forces, but was so anxious to take part in operational duties that he was transferred to Libya, where he led the Free French Lorraine Squadron. He had served in North Africa as a bomber pilot with the Armée de l'Air, but when the War started was on the headquarters staff at Paris. When France collapsed he refused several offers from Vichy and escaped to Gibraltar, arriving in England in time to help in the formation of the Free French Air Force.

U.S. Warships and aeroplanes of the U.S. Pacific fleet made a surprise attack on Japanese naval air bases on the Marshall and Gilbert Islands. Fleet auxiliaries and many aeroplanes were destroyed for a loss of 11 American aeroplanes and minor damage to two American warships. Raids were made on five bases in the Marshalls; and Makin Island in the Gilberts, which the Japanese seized from Great Britain early in the War, was also attacked. This was announced by the U.S. Navy Department on Feb. 1.

Aircraft Production

A CONTRACT for 1,000 Curtiss Navy dive bombers involving an expenditure of \$60,000,000 has been awarded to the Canadian Car and Foundry Company. Mr. Howe, Canadian Minister of Munitions, made this announcement on Jan. 29. The dive bomber is presumably the Curtiss SB2C-1, the Helldiver I. This is the first intimation that this type was to be built in Canada.

ROTOR

CONSTANT SPEED
AIRSCREWS

ROTOR Electric & Hydraulic Airscrews
can be fitted with Wood or Metal Blades

STREAMLINE

ROOT EFFICIENCY



The Hawker Hurricane, termed the world's greatest fighter, has been revitalised. The new Hurricane II has a more powerful version of the Rolls-Royce Merlin engine and the exceptional armament of either twelve machine guns or four cannon. The photograph shows a formation of Hurricane IIC's (the four-cannon type) on patrol.

[Advt.]

Aeroplane Repairs

LIKE all the other German aircraft works, the Junkers Lcombine recently opened a special repair station at Erfurt. Whether the Company took over one of the two existing repair depots, one of which was reported to be owned by the Hermann Göring concern, or built its own works, is not known at present. The Junkers Erfurt factory is said to have taken up the manufacture of entire wing and fuselage units as well.

Contrivers of an Ersatz Future

A SPECIAL SCHOOL for the training of students of raw materials was opened recently in Halle. The new institute is open to applicants with or without academic training, the only condition is that they must have completed their apprenticeship or have worked for two years in an engineering shop. Before they are accepted as pupils they have to undergo an examination to test the fruits of their workshop experience.

The training course lasts two and a half years. To each classroom a workshop or laboratory is attached where the students may make themselves familiar with modern machinery and workshop equipment. The training is completed with a final examination. The successful candidate receives the newly created title "Werkstoff-Ingenieur" (literally: engineer for raw materials) and is entitled to go to one of the Technical High Schools in order to become a Diploma-Engineer.

This new school, with a capacity for between 250 and 300 pupils, instructs the students especially in the new substitutes which play a great part in Germany's industrial production, in particular in the electrical and aeronautical industries. It is therefore not astonishing that a great proportion of the school's students learnt their trade in aircraft factories.

The importance of the new school is significantly illustrated in a lecture of the chief chemist of the AEG, Germany's second greatest electrical combine, Doctor-Engineer Nowack. He compared the present stage of industrial production with the transitory stage several thousand years ago when mankind replaced implements made of stone by those manufactured of bronze. To-day, Doctor Nowack claimed, almost 100,000 new, synthetically produced, raw materials were at our disposal and many of them had not yet found their proper place in industrial production. The new school would therefore contribute to speeding up the use of these new raw materials by teaching young engineers the best methods. Doctor Nowack's plea for wider use of substitute materials has a special significance because his firm is the greatest German manufacturer of plastics and other substitute materials.

OVERSEA RAIDER.—The Dornier Do 26K four-motor flying boat now used in military form by the enemy for long range patrol work. There is a gun turret in the nose and two gun blisters behind the wing.

News from Germany

Leading on the Sub-contractors

GERMAN aircraft manufacturers badly need sub-contractors. In order to help in placing orders, the German Government arranged the establishment of a kind of fair where aircraft manufacturers can meet possible sub-contractors. The first fair of this kind was opened in the former Wheat Exchange of Frankfurt-on-Main. Components and blue-prints were exhibited. The Nazi press claims that in this way orders could be given more speedily than before. Visitors to the new fair wear a "V" on their lapels if they want to place orders, or an "S" if they seek sub-contracts. This new scheme has been so successful that further regional exchanges will be opened in Berlin, Hamburg, Vienna, Munich, Prague, Nürnberg, Stuttgart and The Hague.

Monstrous "Shadows"

THE AGO AIRCRAFT WORKS of Oschersleben, Bode, one of the "shadow" works of the German Aircraft Industry, has a share capital of four million marks. Like the Ago aircraft factory of the 1914/18 war, the present one was founded by the Allgemeine Elektrizitäts Gesellschaft (AEG) of Berlin, which holds 67.5 per cent. of Ago's share capital. The remaining shares seem to be held by the Bank for German Aviation. The Ago runs in addition to the Oschersleben works another factory where mobile repair units are manufactured. The AEG holds 27.5 per cent. of the capital of this factory, which amounts to more than a million marks.

Bulgars for Aircraft Industry

THE BULGARIAN Government and the German Aircraft Industry concluded, last month, an agreement under which 750 young Bulgarians will leave for Germany to be trained as specialists in aircraft manufacture and repair. Applicants must be between the ages of 20 and 30 and have a good education.

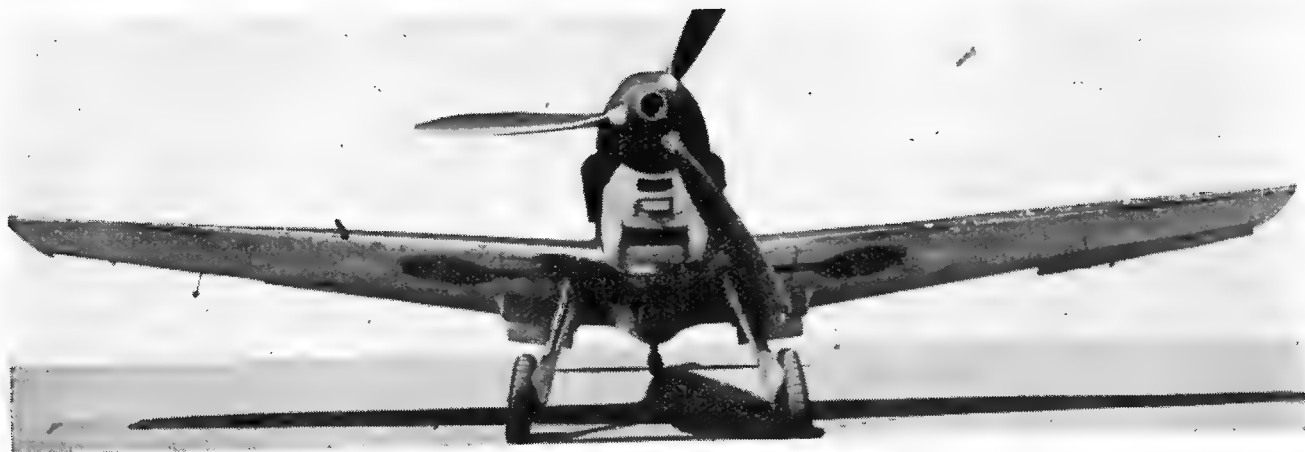
The training will last eighteen months, and the trainees will receive the same wages as German nationals. Travelling expenses will be paid by the German Air Ministry. Each trainee may send home every month 100 German marks, which is equivalent to 3,250 levas. The German Labour Commission in Sofia was receiving applications up to Jan. 30.

Cup Finalists

AS in the last War, German pilots who have distinguished themselves receive in addition to the various Crosses, Iron Crosses, Ritter Crosses, Oak Leaves, Oak Leaves with Swords and Brilliants and the Great Cross, the "Cup for special merits in air fighting." The Cup is given to fighter, bomber, and especially to dive bomber pilots.



DORNIER PLAN VIEW.—The Dornier Do 215 (two DB.601 liquid-cooled motors) photographed from the front gunner's position on a similar type. The new Do 217 closely resembles this machine except for extended nacelles, a bigger wing span and an elongated tail.



The Messerschmitt Me 109E

The following notes are compiled from information much of which is supplied by the Ministry of Aircraft Production. The aeroplanes will be described in greater detail in subsequent issues.

MAKERS.—Messerschmitt Flugzeugwerke A.G., Augsburg, Regensburg, Munich, Kematen (Tyrol). Sub-contractors: Gorhard Fieseler Guibtt, Kassel.

PURPOSE.—Single-seat fighter and fighter-bomber.

TYPE.—Single-engine, low-wing cantilever monoplane with outwards retracting undercarriage, hydraulically-operated, strut-braced adjustable tailplane. Single fin and rudder. Fixed tail wheel.

CREW.—Single pilot in enclosed cockpit in line with trailing edge of wing.

ARMAMENT.—Two 20 mm. (.7874 in.) cannon, one in each wing and two 7.9 mm. (.310 in.) machine-guns on motor cowlings. Weight of fire 290 lb. per min.

POWER PLANT.—One Mercedes-Benz DB.601A 12-cylinder inverted Vee liquid-cooled motor which gives 985 h.p. for take-off. Airscrew diameter, 10 ft. 2½ ins. Fuel capacity, 88 Imp. gallons.

DIMENSIONS.—Span, 32 ft. 3 ins.; length, 28 ft. 8 ins.; height, 7 ft. 6 ins.; wing area, 174 sq. ft.; aspect ratio, 6.00.

WEIGHTS.—Empty, 4,360 lb.; loaded, 5,400 lb.

LOADINGS.—Wing, 32.1 lb. per sq. ft. Power (take-off), 5.48 lb. per h.p. Span, 5.24 lb. per sq. ft.

FLYING CHARACTERISTICS.—The Me 109E handles well and has excellent response to the controls at low speeds. At speeds of more than 300 m.p.h. the controls become far too heavy. The ailerons in particular are almost immovable at around 400 m.p.h. The turning circle is 885 ft. at a height of 1,200 ft. at unspecified speed. This is poor. Because the best rate of climb occurs at a low air speed the angle of climb is good. The stall is very gentle with no tendency to spin and ample warning through aileron vibration and tail buffeting.

Take-off run is remarkably short when the slotted flaps are lowered to 20 degrees. The landing is somewhat tricky because of the high ground angle. Fierce braking is possible because the wheels are well forward of the centre of gravity. Thus the landing run is short and fast taxiing is possible.

The absence of rudder trim is bad because the big change of directional trim with speed is tiring.

CONSTRUCTIONAL DATA.—The cockpit is too cramped for comfort. It is too narrow and has not enough head room. The seating position is tiring. The instruments are well grouped, but a bad feature is the absence of a gyro horizon. The method of jettisoning the cockpit hood is excellent. During taxiing the view is bad. The windscreen has no bullet-proof glass. A good point is a draught-free opening which makes possible high flying speeds in bad weather.

PERFORMANCE.—Max. speed, 354 m.p.h. at 14,760 ft.; range, 560 miles at 248 m.p.h.; initial climb, 3,100 ft. per min.; service ceiling, 36,000 ft.; absolute ceiling, 37,500 ft.

Differences Between Me 109E and Me 109F

The Me 109F is a development of the Me 109E. They differ a great deal in detail. The major points of difference are:—

(i) The wing plan form has been modified and now has rounded tips. The span is increased by about 4 ins. and the area reduced by 1 sq. ft. The ailerons on the 109E were slotted, on the 109F they are of the Frise type. The flaps of the earlier design were slotted, they are now plain and 4 sq. ft. less in area.

(ii) The radiators have been sunk more into the wings and now incorporate a boundary layer bypass. They discharge at the trailing edge.

(iii) The tail wheel is now retractable.

(iv) The braced tailplane has been replaced by a cantilever structure mounted in a slightly lower and further forward position.

(v) The rudder has been altered in shape and decreased in area.

(vi) The 985 h.p. Mercedes-Benz D.B. 601A motor of the 109E has now been replaced by the 1,085 h.p. Mercedes-Benz D.B. 601N.

(vii) The supercharger air intake has been redesigned and is now located further out from the fuselage to increase the ramming effect.

(viii) The airscrew spinner has been enlarged and the diameter of the airscrew reduced by some 6 ins. A constant speed unit now governs pitch control.

(ix) The fuel capacity has been reduced slightly by about 8 Imp. galls.

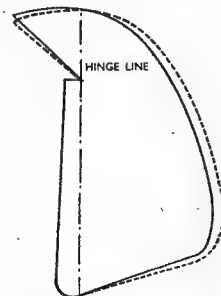
Points of Difference Between the Me 109F1 and the Me 109F2

(1) The 109F1 mounts a 20 mm. Mauser cannon firing through the airscrew hub, while in the 109F2 the cannon is of 15 mm. calibre and of higher muzzle velocity.

(2) The 109F1 is provided with a radio mast which is dispensed with in the second model. The radio aerial of the 109F2 runs from the wing tip to the fuselage instead of from the mast to the fin.

(3) The mass balance weight on the elevators of the 109F1 is enclosed within the skin of the horn, while on the F2 it is screwed into the horn and is quickly now over-balanced.

As a result of the balancing employed, the 109F1 is similar to the 109E on the elevators, whereas those of the 109F2 are over-balanced.



Me 109F1 and 2 Rudder shown by Me 109E shown by -----





The Messerschmitt Me 109F

MAKERS.—Messerschmitt Flugzeugwerke A.G. Augsburg, etc., and Deutsch-Altenburg (Austria).

PURPOSE.—Single-seat fighter and fighter-bomber.

TYPE.—Single-motor low-wing cantilever monoplane with outwards retracting undercarriage, hydraulically operated. Fixed cantilever tail unit. Single fin and rudder. Retractable tail wheel.

CREW.—One.

ARMAMENT.—One MG 151 20 mm. (.7874 in.) cannon, between the cylinder blocks firing through the airscrew hub. Two MG 17 7.9 mm. (.310 in.) machine-guns on motor cowling. Weight of fire 240 lb. per minute.

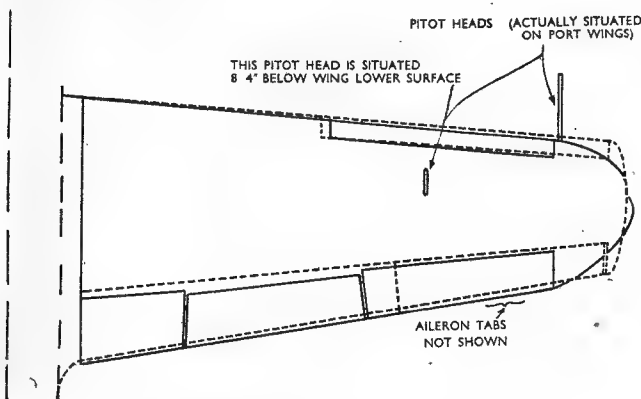
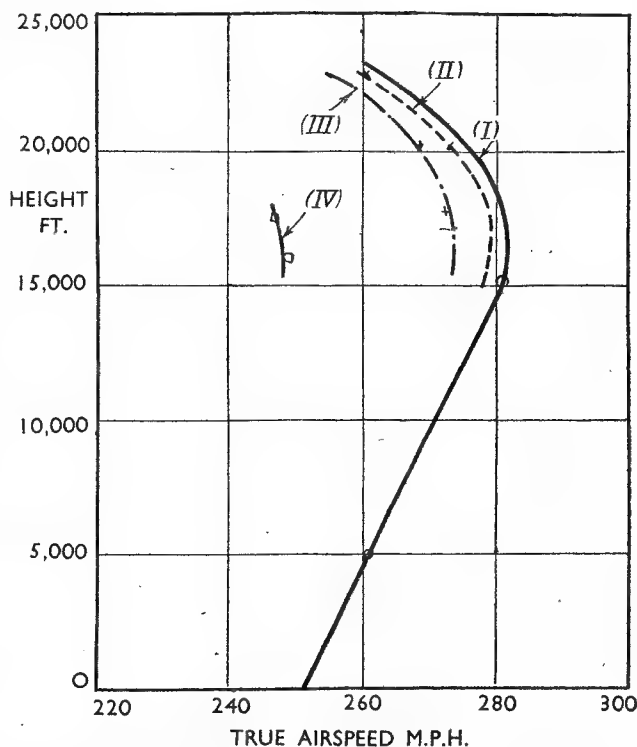
POWER PLANT.—One Mercedes-Benz DB.601N 12-cylinder inverted Vee liquid-cooled motor which gives 1,085 h.p. for take-off. Aircscrew diameter 9 ft. 8½ ins.

DIMENSIONS.—Span, 32 ft. 8½ ins.; wing area, 173 sq. ft.; aspect ratio, 6.2.

WEIGHTS.—Loaded, 6,090 lb.

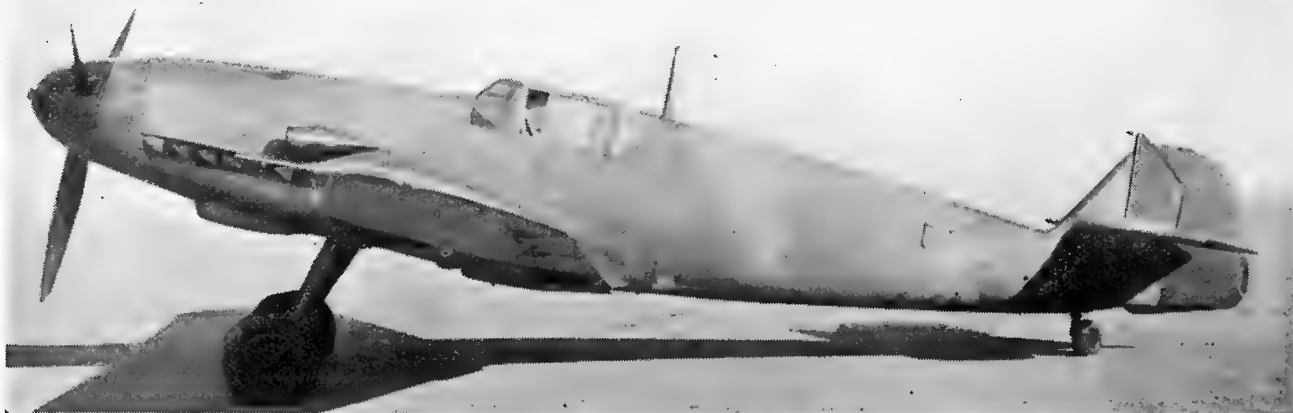
LOADINGS.—Wing, 35.2 lb. per sq. ft.; power (take-off), 5.6 lb. per h.p.; span, 3.1 lb. per sq. ft.

PERFORMANCE.—Max. speed, 371 m.p.h. at 22,000 ft.; 310 m.p.h. at 4,900 ft.; 360 m.p.h. at 26,000 ft. Max. rate of climb, 3,320 ft. per min. at 5,000 ft. at 165 m.p.h. Rate of climb at 20,000 ft. is 2,370 ft. per min. at 165 m.p.h.



Me 109F1 and F2 wing plan shown by ———
Me 109E shown by - - - - -

THE JUNKERS Ju88A6.—Full throttle level speeds of the Ju88A6 described on the next page.—(I) No external bomb racks; weight 19,870 lb.; engine r.p.m. 2,400. (II) No external bomb racks; weight 19,870 lb.; engine r.p.m. 2,300. (III) External bomb racks with no bombs; weight 22,200 lb.; engine r.p.m. 2,300. (IV) External bombs; weight 24,350 lb.; engine r.p.m. 2,400.



The Junkers Ju 88A6

MAKERS.—Junkers Flugzeug und Motorenwerke A.G. Dessau.

PURPOSE.—General-purpose bomber.

TYPE.—Two-motor low-wing cantilever monoplane with fixed cantilever tailplane and single fin and rudder. Backwards-retracting two-wheel undercarriage. Retractable tail wheel.

CREW.—Four accommodated together in the nose of the fuselage.

ARMOUR.—Some protection is provided for every member of the crew.

ARMAMENT.—Four 7.92 mm. M.G. 15 machine-guns. One forward gun can be used either fixed or free, the others are hand operated. 29 magazines of 75 rounds each are normally carried.

POWER PLANT.—Two 1,200 h.p. Junkers Jumo 211Gr direct-injection inverted-Vee motors with two-speed superchargers. Three-bladed V.D.M. controllable-pitch airscrews without constant-speed mechanism.

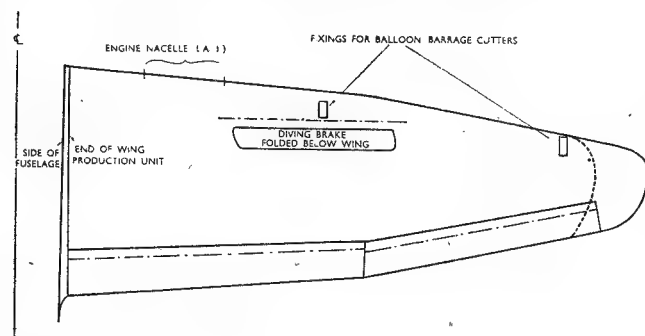
DIMENSIONS.—Span, 65 ft. 7 ins.; length, 47 ft. 1 in.; height, 15 ft. 5 ins.; wing area, 583 sq. ft.; aspect ratio, 7.36.

WEIGHTS.—Loaded, 24,350 lb.; max. overload, 28,500 lb. (with assisted take off either by flywheel winch or rockets).

LOADINGS.—Wing loading, 41.8 lb. per sq. ft.; power loading, 10.14 lb. per h.p.; span loading 5.66 lb. per sq. ft.

PERFORMANCE.—Max. speed, 281 m.p.h. at 16,000 ft. at 19,870 lb.; 248 m.p.h. at 16,000 ft. at 24,350 lb.; rate of climb, 1,370 ft./min. at 21,800 lb., 700 ft./min. at 24,350 lb.; service ceiling, 26,700 ft. at 22,200 lb., 21,000 ft. at 24,350 lb.; take-off distance (loaded to 24,350), 690 yds.

BOMB LOADS.—Two faired bomb carriers under each wing will take bombs up to 1,000 kg. (2,205 lb.) in weight. These carriers will also



COMPARATIVE WING PLAN—Ju 88A1 (smaller) and Ju 88A6.



ANGULARITY—The nose of a Ju 88.



[Photograph by Newsreel Association of Great Britain.]
FLYING TRIALS.—A captured Ju 88A6 in the air.

take either large incendiary containers or extra fuel tanks. Bombs may also be carried internally within the fuselage.

EQUIPMENT AND TANKAGE.—Dive brakes are mounted beneath the outer wing panels. These are arranged to fold back against the under surface in normal flight and fit more closely than in earlier models.

Provision is made for the fitting of balloon fenders and the structure is suitably strengthened.

De-icers are also fitted and are of the exhaust-heat type on the leading edge of the mainplane, whereas the tail unit is provided with pulsating de-icers.

The bomb sight is of the B.Z.A. 1 type suitable for dive bombing.

The radio equipment is of the FuG.16 pattern.

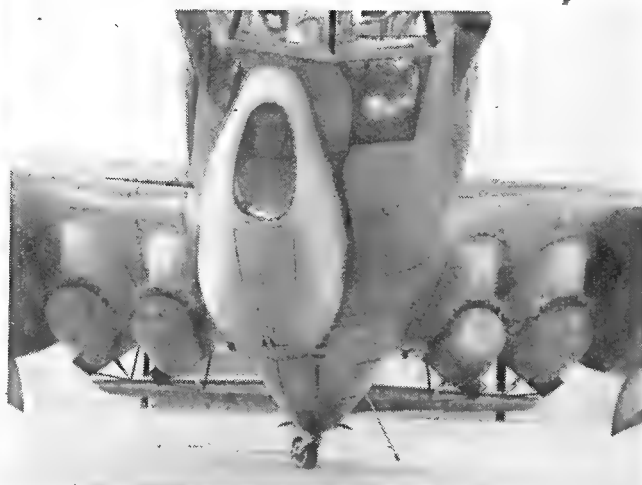
Total tank capacity of 638 gallons provided by four 92-gallon wing tanks and a fuselage tank of 270 gallons. An additional 150-gallon tank can be carried in the aft bomb bay. This tank may be jettisoned.

CONSTRUCTIONAL DATA.—All-metal structure and covering. The Ju 88A6 differs little from the earlier A1 and A4 models but has had its wing span increased from 59 ft. 9½ ins. to 65 ft. 7½ ins. The ailerons are now inset instead of extending to the wing tips and have metal covering instead of the fabric used on earlier models.

Another innovation in the Ju 88A6 is the provision of attachments for the balloon fender. Boxes at the wing tips look as if they are intended to accommodate some kind of cable-cutting apparatus.

Modifications have also been made to the upper and lower rearward firing gun mountings. The lower gun is very awkward to handle.

No attempt has been made to use plastics as a substitute for metals although they are used in the normal way for transparent panels and as electrical insulators.



EXTERNAL STOWAGE—Bombs slung on the Ju 88A6.

*In Brief—
the Best*



ALVIS

ALVIS LTD. ENGLAND

Mich. Shackleton. 41.

Whooper swans seldom gather in large numbers for their seasonal flights to and from their northern breeding grounds. At these times the pens and younger birds are led by an experienced cob. His instinctive sense of danger and unerring direction befit him to lead, both on the wing and during the time spent by the birds in their winter quarters.

Experience



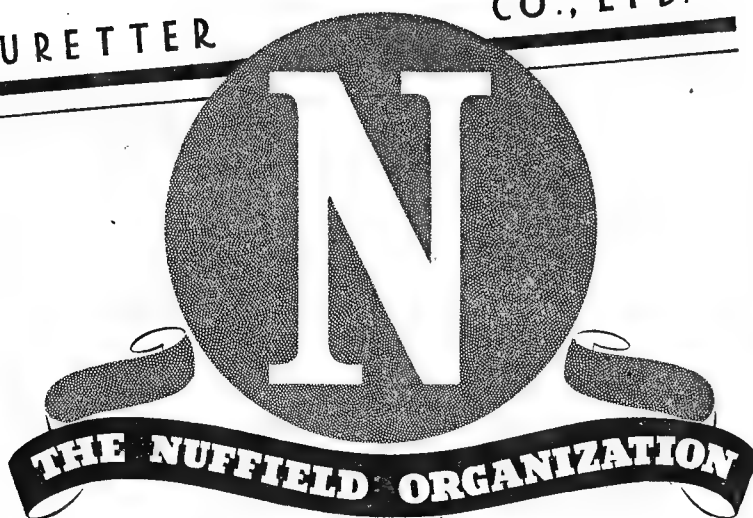
Community is right to rely on experience to show the way, especially when the leader is yet virile with the spirit of adventure.

Backed by a record of successful experience reaching from the dawn of practical flight and spurred on by an adventurous will for progressive achievement, the de Havilland world-wide organisation plays an unique role in the mastery of the air for man's benefit.

All
aircraft powered
by **ROLLS-ROYCE**
engines *are* fitted *with*
S.U. Carburettors

S.U. CARBURETTER

CO., LTD.





JAPAN IN THE AIR—The success of the Japanese has probably depended on a combination of surprise, on superior numbers, and on a careful preliminary organization which may be thrown out of balance, like the Germans, by unexpected resistance. These pictures show typical aeroplanes of the Army and Navy Air Forces, none of them equal in performance to the latest fighters and bombers of the Royal Air Force or the United States Air Forces: (1) Mitsubishi 96 bombers of the Japanese Army Air Force flying by the sacred mountain of Fujiyama; (2) A formation of the same light bombers on their way to raid China; (3) A Mitsubishi Army 98-1 photographed over the source of the Yangtze River and valley in China; (4) Mitsubishi Army 97 bombers warming up on a Northern China station before setting off for a raid on Chungking; (5) Some of the crew of a Mitsubishi Army 97 on their way to a target; (6) A Mitsubishi Army 97 being "bombed up" by a ground crew before setting off on a raid over China; (7) A Kawanishi 94 naval reconnaissance seaplane being hoisted on to the deck of a Japanese warship.





A HANDLEY PAGE HALIFAX.

The Roll of Honour

THE ONE HUNDRED-AND-SIXTH CASUALTY LIST was published by the Air Ministry on Jan. 28 and the One Hundred-and-Seventh on Jan. 29. They contain 262 and 264 names respectively of R.A.F. personnel, including 56 in one and 88 in the other previously reported. Of this total of 144 previously reported four are now prisoners of war and one prisoner of war is now reported to have died of wounds received in action. Of the others, 99 previously missing or missing believed killed in action are now presumed and reported killed, and 39 missing believed killed on active service or missing are now presumed and reported killed.

The two Lists include 31 killed in action, 25 wounded, 23 missing believed killed in action and 148 missing. On active service five are missing believed killed, 84 have been killed, 31 wounded, 14 have died of wounds and 21 have died.

The two Lists bring the total of R.A.F. casualties officially reported since the War began to 20,749.

The One Hundred-and-Sixth and One Hundred-and-Seventh Casualty Lists are:—

Killed in Action

(While Flying in Operations
Against the Enemy)

1023594 Sgt. T. S. Dickson.
754873 Sgt. R. V. Gazzard.
1180566 Sgt. G. P. Langdon.
41053 F/O J. T. O'Brien.
1263633 Sgt. J. E. Rose.
26193 W/C C. M. Windsor.
34065 W/C D. F. Balsdon.
1257106 Sgt. R. T. Bray.
905997 Sgt. E. R. Budgell.
974296 Sgt. W. Dodds.
43033 P/O C. A. G. Ferguson.
905337 Sgt. L. W. Jones.
981329 Sgt. F. Y. D. Kerr.
40924 F/L J. E. Lambert.
755244 Sgt. V. S. Lewis.
61248 P/O R. H. Matthews.
745807 F/Sgt. G. E. A.
Pendrill, D.F.M.
968384 Sgt. R. C. Wood.
61959 Act. F/L R. A. Wright.

Previously Reported Missing Believed Killed in Action, Now Presumed Killed in Action

87433 P/O A. F. Buck.
967757 Sgt. L. L. Evered.

47306 P/O J. S. H.
Fairweather.
552727 Sgt. K. G. Gresty.
47300 P/O I. McG. Pringle.
742026 Sgt. I. G. Sarjeant.
755675 Sgt. L. H. Wood.
1163174 Sgt. H. Challis.
754863 Sgt. J. V. Clegg.
999577 Sgt. T. A. H. Drysdale.
1160972 Sgt. S. T. F. Edwards.
88407 P/O D. Irving.
956950 Sgt. B. E. Sale.
102591 P/O P. H.
Slater-Eiggert.
983447 Sgt. F. Stephens.
640883 Sgt. C. Wilkinson.

Previously Reported Missing, Now Presumed Killed in Action

974030 Sgt. J. Allen.
759219 Sgt. G. A. Bennetts.
922969 Sgt. L. B. Box.
534385 L.A.C. T. W. Brown.
61026 P/O A. D. Browne.
903471 Sgt. J. Claxton.
629430 Sgt. A. E. Coakes.
654143 F/Sgt. S. C. Cordy.
741754 Sgt. A. R. Cotterell.

THE ROYAL AIR FORCE

40523 F/O M. S. Ferguson.
60343 P/O J. Gill.
939014 Sgt. S. Gordon.
40471 Act. F/L R. A. Green.
62000 P/O T. B. Grenon.
752233 Sgt. E. A. F. Grunsell.
39598 F/L A. C. H. Haines.
549626 F/Sgt. A. Halfpenny.
D.F.M.
42123 Act. F/L K. T. Hannah.
956665 Sgt. E. R. Harcourt.
751347 Sgt. J. Harding.
977450 Sgt. R. A. Hewlett.
39016 Act. S/L P. H. Jackson.
39991 P/O C. B. Jordan.
60085 P/O N. H. C. Keable.
85284 P/O L. H. Mercer.
942752 Sgt. J. Mitchell.
754002 F/Sgt. H. T. Naughtin.
937503 Sgt. R. Oldroyd.
754046 Sgt. G. Owens.
44176 P/O E. A. Reeman.
37830 Act. S/L B. J. Rogers.
A.F.C.
60831 P/O M. A. Scott.
87038 F/O I. O. MacK. Smith.
41216 F/O W. M. R. Smith.
D.F.C.
580531 Sgt. P. McK.
Southwood.
970360 Sgt. G. J. Talbot.
908698 Sgt. J. F. Walton.
969973 F/Sgt. R. Wordsworth.
948583 Sgt. G. R. Adams.
968113 F/Sgt. R. I. H. Aird.
902859 F/Sgt. K. C. Amy.
37031 S/L A. G. G. Baird.
82722 Act. F/O J. du V.
Broughton.
551290 F/Sgt. T. O.
Burgess, D.F.M.
42396 Act. F/L J.
Curchin, D.F.C.
1378433 Sgt. B. Douglas.
1152264 Sgt. W. D. Edge.
85673 P/O T. Fairhurst.
930735 Sgt. E. C. Findon.
85265 P/O R. Goulding.
936229 Sgt. G. K. Grainger.
967735 Sgt. J. Hadfield.
944123 Sgt. C. W. Hall.
922344 Sgt. E. Hollinghurst.
1253067 Sgt. R. H. Jordan.
89386 P/O J. C. Lynn.
903519 Sgt. J. M. Macilwraith.
44564 F/O D. Mackay.
82988 P/O M. I. A. Mendoza.
974190 Sgt. W. R. Moore.
779002 Sgt. D. Morrison.
87450 P/O C. A. Newman.
949798 Sgt. K. T. Noakes.
567731 Sgt. R. A. Pickers.
546681 F/Sgt. A. P.
Price, D.F.M.
748174 Sgt. E. J. Rapley.
81413 F/O W. C. Rasbary.
42776 F/O M. V.
Redfearn-Smith.
1100648 Sgt. C. Rhodes.
521372 F/Sgt. W. G. Rogers.
959587 Sgt. J. A. Rudkin.
936263 Sgt. L. Smith.
566398 Sgt. N. H. Thomas.
905008 Sgt. L. S. Thorrowgood.
1006323 Sgt. C. G. Todd.
43380 Act. F/O P. B. Verver.
988001 Sgt. H. V.
Wansbrough.
22154 F/O W. F. Ward.
572749 Sgt. R. C. Watkins.
77968 F/O S. P. Watkins.
25040 S/L R. E. Weld.

Previously Reported Prisoner of War, Now Reported Died of Wounds or Injuries Received in Action

528627 Sgt. H. P. L. White.

Wounded or Injured in Action

627399 Sgt. J. Devlin.
970963 Sgt. W. Hendrick.
40114 Act. S/L T. M. Horgan.
D.F.C.
943281 Sgt. C. F. Lucas.
1260270 Sgt. K. E. Robinson.
1365260 Sgt. J. A. Rogers.
746901 Sgt. T. J. Ryder.
1167725 Sgt. F. H. Baron.
1065752 Sgt. H. Bolton.
551551 Sgt. A. E. Clarke.
102603 P/O J. H. Day.
87449 P/O H. P.
Lardner-Burke, D.F.C.
924192 Sgt. T. C. M. Marshall.
970668 Sgt. W. Middlemiss.
970888 Sgt. J. L. P. Pate.



A DESERT TRAIN.—Trains of bombs which are to be loaded on Martin Maryland bombers at a desert aerodrome in Libya.

967747 Sgt. J. R. Sutherland.
33554 Act. F/L T. A. Vigors, D.F.C.
39952 F/L D. R. Walker.
562374 F/Sgt. I. M. Williams.

Missing Believed Killed in Action

1006358 Sgt. C. T. R. Anderson.
37904 Act. W/C M. H. Brown, D.F.C.
88717 P/O B. M. Cavan.
41826 F/O P. S. Charles.
964955 Sgt. J. A. Groom.
1375987 Sgt. J. J. Lammin.
1160033 Sgt. A. I. Mills.
1371161 Sgt. T. Robson-Scott.
995861 Sgt. P. A. Taylor.
73012 S/L J. G. Walker.
88030 Act. F/L H. D. Webber.
41772 F/O C. H. Anderson.
541679 Sgt. D. A. Brunton.
1254035 Sgt. D. W. Buck.
973996 Sgt. J. Evans.
85275 P/O R. E. Sellar.
67585 P/O E. E. Steele.
1113931 Sgt. F. Thompson.

Missing

909403 Sgt. S. Abram.
106142 P/O R. Adcock.
567431 Sgt. E. A. Bailey.
1163598 Sgt. F. E. Baldock.
81334 F/O P. E. Bedell.
40502 F/L W. E. Bowden.
1004210 A.C.1 W. T. D. Burnett.
967971 L.A.C. A. H. Chapman.
104421 P/O F. R. Clarke.
544010 Sgt. T. L. Clarke.
1379167 Sgt. J. Crawford.
755182 Sgt. P. Eaton.
103592 P/O A. M. Fisher.
37009 S/L R. G. Forshaw.
910022 Sgt. B. Gray.
40907 S/L T. Grier, D.F.C.
904327 Sgt. A. O. Hawkes.
759085 Sgt. H. W. Hilton.
41926 Act. F/L J. B. Hobbs.
921014 Sgt. S. E. Horsfall.
919475 Sgt. W. A. Hughes-Hughes.
84317 F/O C. G. Imlay.
88040 P/O C. L. Jenkins.
1014016 Sgt. A. King.
1164443 Sgt. F. G. Kipps.
86327 F/O K. C. Kitto.
755245 Sgt. E. R. G. Lewis.
630163 F/Sgt. D. Martin.

81914 F/O G. W. Morris.
777886 Sgt. J. Nash.
1375231 Sgt. W. A. Nation.
996501 Sgt. F. Norman.
933248 Sgt. B. W. Falastanga.
916157 Sgt. P. G. Pearce.
85004 Act. F/L G. Pelling.
740815 F/Sgt. J. K. Pollard.
580701 F/Sgt. R. J. H. Pyle.
39620 Act. S/L J. L. Riley.
45230 P/O J. H. Strong, D.F.M.
39448 Act. S/L A. L. Taylor, D.F.C.
637513 Sgt. G. E. Thompson.
42774 Act. F/L O. V. Tracey.
639130 Sgt. R. A. Webb.
590711 F/Sgt. W. E. Webb.
918373 Sgt. C. L. Wells.
37950 F/L G. P. Westropp-Bennett.
942422 Sgt. B. J. Williams.
749796 F/Sgt. J. Wilson.
1061136 Sgt. G. Anderson.
1006920 Sgt. R. A. P. V. Atkinson.
43528 F/O P. R. Bellamy.
39778 S/L R. C. Bisset, D.F.C.
903620 Sgt. C. J. Bourner.
1005743 Sgt. H. H. Brown.
1013276 Sgt. C. V. Catherall.
955028 Sgt. W. P. Dales.
33163 S/L W. A. A. De Freitas.
1152551 Sgt. W. L. Evans.
1062114 Sgt. R. D. Gracie.
1050080 Sgt. G. F. Halliwell.
1006421 Sgt. M. Hogarth.
551850 Sgt. B. Howells.
67653 P/O J. B. King.
966807 Sgt. D. McLaren.
1057912 Sgt. W. Oates.
1199102 L.A.C. J. Oldfield.
932162 Sgt. T. J. Pearce.
1259718 Sgt. R. S. Prior.
1256360 Sgt. R. J. Pulham.
952508 Sgt. H. Rose.
1183267 Sgt. R. F. Rudee.
33287 S/L C. D. S. Smith, D.F.C.
748264 Sgt. L. W. Stammers.
1168359 Sgt. A. H. Taylor.
82214 P/O D. Woodcock.

Missing Believed Killed on Active Service

(While Engaged on Non-operational Flying Duties or on the Ground through Enemy Action.)
748413 F/Sgt. R. B. Birtles.
100615 P/O E. T. Bradford.
1417519 A.C.2 A. Craven.
1419886 A.C.2 D. L. J. Evans.
1456819 A.C.2 K. Musgrove.

Killed on Active Service

1375120 Sgt. A. Bailey.
16025 Act. W/C G. C. B. Bernard-Smith.
979835 Sgt. G. Boyle.
1261560 Sgt. P. R. Chancellor.
1065864 L.A.C. W. A. M. Davis.
100608 P/O J. E. A. H. Fairfax, D.F.M.
900045 Sgt. W. A. Fradley.
40817 F/O N. I. C. Francis.
638345 Cpl. T. Gamble.
1312156 L.A.C. P. Greene.
916275 Sgt. B. L. Grove-Palmer.
101631 F/L J. J. Hamilton.
642560 Sgt. W. C. F. Harris.
1384280 L.A.C. R. W. Hinde.
1381908 L.A.C. S. Holden.
60344 P/O D. H. Ivens.
47356 P/O G. R. Lamb.
741461 Sgt. V. H. Langrish.
1202558 Sgt. P. N. Lister.
626261 L.A.C. A. Lovell.
109057 P/O R. Masters.
550691 Sgt. T. McK. Sinclair.
102980 P/O E. L. V. Stanley.
622756 Sgt. A. Stather.
1377643 Sgt. J. L. Sudders.
656910 L.A.C. S. B. Tebbly.
112730 P/O W. J. Turner.
1050617 Sgt. E. Welch.
565050 W/O S. C. Williams.
1105527 A.C.2 T. Broom.
101504 P/O W. R. Constable.
798599 Sgt. R. K. Cook.
112740 P/O H. R. Cutten.
939302 Sgt. J. A. Denning.
47284 P/O A. L. Edwards.
522219 Cpl. T. P. Farr.
104430 Act. F/O E. A. F. Gibb, D.F.M.
1255377 Sgt. H. A. Godsmark.
536190 F/Sgt. A. G. Graves.
648598 Cpl. J. A. Hancock.
1325793 Sgt. H. W. G. Hewitt.
656197 L.A.C. R. D. Hiles.
1325760 Sgt. L. Hogg.
1382462 Sgt. S. A. Holland.
580042 F/Sgt. L. J. Kuhrt.
1284549 L.A.C. D. F. Leman.
525691 F/Sgt. C. D. Mace.
908800 Sgt. S. R. Mayston.
702345 Sgt. L. Merrifield.
84914 Act. F/L R. F. Owen, D.F.C.
778436 Sgt. R. H. D. Palmer.
904199 L.A.C. D. W. Parrett.
60082 P/O G. H. Ranger.
778517 Sgt. S. C. Rhynas.
569909 Sgt. G. H. Savoy.
549630 F/Sgt. C. Stow.
995855 Sgt. C. J. Stuart.

110124 P/O M. B. Van-Heerden.
1175044 A.C.1 R. F. Watson.
1257327 Sgt. E. C. Welsh.
46963 P/O A. H. Wilkinson.

Previously Reported Missing Believed Killed on Active Service, Now Presumed Killed on Active Service

909599 Sgt. W. C. Henning.
89066 P/O T. R. Hodgson.
950411 Sgt. E. R. Peacock.
946695 Sgt. A. E. Sanne.
651810 Sgt. P. Savage.
1101859 Sgt. J. F. Smith.
900226 Sgt. J. Whitbread.

Previously Reported Missing, Now Reported Killed on Active Service

100535 P/O W. J. White.

Previously Reported Missing, Now Presumed Killed on Active Service

1111418 A.C.2 J. H. Bateman.
1377955 A.C.1 J. R. Brand.
538067 L.A.C. J. Broadhurst.
906384 L.A.C. R. E. Brodie.
552807 Sgt. R. F. Brooks.
1175691 A.C.2 R. D. Coombes.
1107691 A.C.1 J. T. Farquhar.
1245502 A.C.2 F. K. Faulkner.
37674 F/L R. W. Gautrey.
747020 L.A.C. C. F. Harrison.
1022021 A.C.2 C. Holland.
808399 L.A.C. S. Hooper.
75448 Act. S/L A. S. Lee.
552216 Sgt. L. Littlefair.
994218 A.C.1 H. S. McKeown.
88696 P/O K. G. A. Marsh.
924685 A.C.1 B. J. Messer.
343606 F/Sgt. G. E. Morrison.
1053286 A.C.1 H. Paisley.
1189709 A.C.1 D. H. J. Peppercorn.
936854 Cpl. E. C. Pittaway.
590454 Sgt. G. Poock.
527651 F/Sgt. E. C. Reed.
350828 Cpl. H. V. Richmond.
1189615 A.C.1 F. B. Rose.
70613 F/L C. MacK. Scrutton.
1189631 A.C.1 E. Shipman.
1247181 L.A.C. A.C.2 W. H. Smith.
1224503 A.C.2 D. W. Turner.
1275467 A.C.2 W. F. Turner.
37617 Act. S/L W. P. F. Treacy.



FOR THE WOUNDED.—Lockheed Lodestars of the South African Air Force are being used as ambulance aeroplanes in the Middle East. A number of Lodestars were ordered for South African Airways and may have been released to the S.A.A.F.



ADVANCED TRAINING.—Australian pilots on an advanced training course in Great Britain ready to take-off in a Blackburn Botha.

Wounded or Injured on Active Service

620487 F/Sgt. R. C. A. Best.
1233518 L.A.C. A. Bird.
1375159 Sgt. T. D. Durrant.
73040 P/O R. K. S. Harker.
552116 Sgt. E. N. King.
611079 Sgt. W. A. Lane.
87429 P/O E. E. Sergeant.
1074275 Sgt. F. Tolson.
64879 P/O G. F. Tredwell.
958537 A.C.2 O. T. Archer.
711029 Sgt. D. H. Barlow.
1262846 Sgt. J. P. Bentley.
1079196 A.C.2 T. Butterfield.
1295462 A.C.2 G. J. Carpenter.
941538 Cpl. J. W. Dawson.
643075 Cpl. C. H. Edmonds.
69460 P/O G. Fisher.
630156 A.C.2 E. G. Harvey.
1120984 A.C.2 J. Hughes.
1202411 A.C.2 M. I. Jackson.
1134355 L.A.C. G. H. Johnson.
638742 F/Sgt. A. W. Jones.
1109149 Sgt. G. Owen.
575176 A.C.1 P. J. Shepherd.
655884 L.A.C. J. L. Smith.
1059797 Sgt. H. S. Thomas.
1106851 Cpl. W. McG. Wilson.

Died of Wounds or Injuries Received on Active Service

1365058 A.C.1 W. A. Elliot.
778196 A.C.1 E. G. Lenthall.
1378785 Sgt. J. L. Arthur.
927801 A.C.2 T. J. Barrah.
943541 A.C.1 W. M. Boal.
1500448 Sgt. E. R. Bowman.
1208623 Sgt. R. J. Clark.
1002281 Sgt. M. T. Garfin.
935113 L.A.C. A. J. Headland.
760724 L.A.C. J. H. Hill.
1213916 L.A.C. N. R. Hughes.
1035588 L.A.C. L. Stock.
1100861 Sgt. J. E. Wilson.

Died on Active Service

1081535 A.C.2 J. Costigan.
777914 Sgt. J. D. Martin.
549121 Sgt. R. M. Tait.
988483 Sgt. F. Armitage.
1075166 A.C.2 D. L. Bamber.
1465559 A.C.2 A. E. Blake.
1563448 A.C.2 F. W. Bodden.
209448 F/Sgt. P. E. Clark.
69220 Act. F/O J. A. Cunningham.
960664 A.C.1 T. J. Edmonds.
974013 Cpl. W. Gallacher.
990472 A.C.1 F. Mason.
1175829 L.A.C. H. E. R. Smith.
993847 A.C.1 T. Torbett.
922787 L.A.C. J. H. Trandell.
1288793 A.C.1 G. R. Wade.
1289704 A.C.1 J. Whitford.
1051811 L.A.C. A. Young.

Previously Reported Missing Believed Killed on Active Service, Now Reported Prisoner of War

627014 A.C.1 J. A. Darragh.

Previously Reported Missing, Now Reported Prisoner of War

938672 Cpl. H. L. Barber.
1010138 A.C.1 A. Vernall.
1258218 Sgt. W. A. Weaver.
947124 A.C.2 W. G. White.

WOMEN'S AUXILIARY AIR FORCE

Died on Active Service

442668 A.C.W.2 P. Hicks.

ROYAL AUSTRALIAN AIR FORCE

Killed in Action

Aus.406104 P/O J. A. Galvin.
Aus.6002 P/O E. H. Lane.
Aus.404081 Sgt. L. Furves.

Wounded or Injured in Action

Aus.6224 Sgt. N. Elliott.
Aus.407246 P/O J. S. Mercer.

Missing

Aus.400692 Sgt. R. T. Brewin.
Aus.402156 P/O R. Devenish-Mearces.
Aus.404142 Sgt. W. J. Dillon.
Aus.402187 Sgt. N. G. S. Drummond.
Aus.407236 Sgt. G. Hart.
Aus.404248 Sgt. D. G. Jack.
Aus.406179 P/O R. J. D. Jeffries.
Aus.400058 Sgt. E. M. Lindsay.
Aus.40507 P/O W. A. B. Logan.
Aus.400833 F/O D. Rutter.
Aus.407557 Sgt. C. B. Treloar.
F/O M. H. Watson.
Aus.406138 P/O A. J. Cain.
Aus.407329 P/O E. A. Magor.
Aus.406167 Sgt. T. B. MacIver.
Aus.400135 Sgt. E. H. Schrader.
Aus. 573 F/L A. M. White.

Killed on Active Service

Aus.404502 P/O R. W. Hopkins.
Aus.401077 P/O J. M. McLaren.
Aus.404636 Sgt. W. R. Myles.
Aus.403113 Sgt. R. E. F. Sawyer.
Aus.402155 P/O C. R. Digges, D.F.C.
Aus.404930 P/O J. E. M. Dixon.
Aus.404263 P/O H. B. Rowland.

Wounded or Injured on Active Service

Aus. 10716 L.A.C. K. H. McNicol.
Aus. 18512 A.C.1 W. N. Porter.
Aus.404616 Sgt. C. Leigh-Murray.

Died of Wounds or Injuries Received on Active Service

Aus.406184 Sgt. K. N. Mansfield.
Aus.404393 Sgt. V. C. Akes.

ROYAL CANADIAN AIR FORCE

Killed in Action

R.62966 Sgt. M. A. Canty.
R.65640 Sgt. P. Comroe.
R.74903 Sgt. H. Bischlager.
R.60253 Sgt. J. L. Gibson.

Previously Reported Missing, Now Presumed Killed in Action

R.56846 Sgt. H. R. Easton.

Wounded or Injured in Action

R.65220 Sgt. H. A. Macleod.
R.58479 Sgt. G. N. Niblo.

Missing, Believed Killed in Action

R.70069 Sgt. D. C. Newsome.

Missing

J.4339 P/O L. W. Almquist.
J.4751 P/O J. A. Bitcon.
R.68575 Sgt. W. G. Caldwell.
R.78092 Sgt. D. A. Court.
J.5663 P/O H. F. English.
R.78195 Sgt. W. A. Evans.
J.6849 P/O G. P. Ford.
R.54535 Sgt. D. G. Pettet.
R.77339 Sgt. W. Turley.
R.62010 Sgt. L. S. Barker.
R.64430 Sgt. J. S. Calderwood.
R.69002 Sgt. C. M. Complin.
R.64424 Sgt. C. E. Hillmer.
R.71689 Sgt. A. J. Knight.
R.70457 Sgt. A. P. McLean.
R.61354 Sgt. R. P. Mann.
J. 2830 P/O R. A. Mather.
R.67565 Sgt. H. A. Staszuck.
J. 3501 P/O J. McG. Taylor.
R.58545 Sgt. R. L. Thompson.
R.69885 Sgt. J. L. Vaughan.

Killed on Active Service

R.84118 Sgt. J. S. Bird.
R.85712 Sgt. A. C. Bone.
R.74283 Sgt. H. B. L. Gittins.
R.74869 Sgt. C. J. M. Howlett.
J.6170 P/O J. Lynas.
R.68706 Sgt. D. R. McCullough.
R.76188 Sgt. D. L. Meisner.
R.84031 Sgt. S. D. Fassiono.
J. 7026 P/O V. E. Friesen.
R.65342 Sgt. J. A. Stewart.

Wounded or Injured on Active Service

J.6172 P/O R. J. Jackson.

Died on Active Service

R.72074 Sgt. G. C. Bailey.

ROYAL NEW ZEALAND AIR FORCE

Killed in Action

NZ.402844 Sgt. S. C. Black.
NZ.40244 F/O E. E. Stewart.

Missing Believed Killed in Action

NZ.402473 Sgt. S. V. Crowhurst.
NZ.403470 Sgt. G. Morcom.

Missing

NZ.402437 Sgt. W. E. Houston.
NZ.40942 Sgt. J. B. Leigh.
NZ.40924 Sgt. W. H. J. Milner.
NZ.401215 Sgt. C. J. Rudge.
NZ.402178 Sgt. G. M. Goldfinch.
NZ.401380 P/O G. E. Guthrie.
NZ.402232 Sgt. D. R. White.

Killed on Active Service

NZ.41867 P/O D. R. L. Brown.
NZ.405240 Sgt. D. J. Dempsey.
NZ.41363 Sgt. A. L. Sanderson.
NZ.41464 P/O R. P. W. Barker.
NZ.41301 P/O W. S. Beattie.
NZ.39933 F/O D. M. Poynter.

SOUTH AFRICAN AIR FORCE

Killed in Action

102199 Air/Sgt. V. St. C. Brack.
103167 Lt. J. G. Ereaud.
102077 2nd Lt. C. N. Summersgill.

Previously Reported Missing, Now Reported Killed in Action

102230 Sgt. H. A. Read.

Wounded or Injured in Action

102246 2nd Lt. R. A. Joiner.
102257 Air/Sgt. D. Newell.

Missing Believed Killed in Action

205429 Air/Sgt. T. B. Atkinson.
103102 Lt. T. T. Braithwaite.

Missing

94294 Lt. B. G. Alexander.
47208 Lt. A. Benzie.
102345 2nd Lt. R. I. Burrage.
102089 2nd Lt. W. G. Cathew.
102514 Air/Sgt. D. A. Chalmers.

94957 Air/Sgt. G. J. De Klerk.
102656 Capt. J. H. Eccles.
102918 Major T. S. Fisher.
102620 Major M. H. Fowler.
102464 Air/Sgt. A. Friedman.
47217 Lt. S. Goldfoot.
94338 Air/Sgt. J. Hattingh.
95690 Lt. D. A. Hinde.
47234 Lt. Oberholzer.
103464 2nd Lt. K. H. O'Reilly.
103104 Lt. T. L. Parry.
31883 Lt. W. G. Parsons.
102130 Air/Sgt. J. E. Phelps.
102351 Air/Sgt. S. Radomsky.
102981 Major R. J. Stewart.
102537 Air/Sgt. W. D. Tucker.
5569 Air/Sgt. R. Viljoen.
102467 Air/Sgt. F. B. White.
47879 Lt. L. D. Wood.
47914 Lt. M. R. Bour.
47641 Lt. G. A. Chalkeley.
5071 Air/Sgt. A. B. Le Roux.
102123 Air/Sgt. L. D. Shanley.

Royal Air Force Awards

HIS MAJESTY THE KING has approved the following awards for gallantry in flying operations against the enemy and for gallantry and brave conduct:—

Distinguished Flying Cross

Squadron Leader E. P. P. Gibbs—No. 130 Squadron.
Flying Officer P. J. Cundy—No. 120 Squadron.
Pilot Officer R. R. Fabel, R.A.F.V.R.—No. 120 Squadron.
Act. Warrant Officer T. J. Mycock, R.A.F.V.R.—No. 97 Squadron.

Distinguished Flying Medal

Sergeant C. L. Bray, R.C.A.F.—No. 103 Squadron.
Sergeant D. W. Spooner, R.A.A.F.—No. 103 Squadron.

George Medal

Act. Corporal Thomas Hill.
Leading Aircraftman S. W. J. Green.

British Empire Medal

Sergeant James Bremner.
Leading Aircraftman R. D. Moore, R.A.A.F.

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by

ESC

ENGLISH STEEL CORPORATION LIMITED

Extracts from The London Gazette

Air Ministry, January 13, 1942.

ROYAL AIR FORCE VOLUNTEER RESERVE

ADMINISTRATIVE AND SPECIAL DUTIES

BRANCH.—To be Act. Plt. Offs. on prob. (emergency):—Dec. M. N. Balsille, Leslie Barker, A. L. Barnes, R. D. Barnett, W. T. C. Bastrop, W. J. Billington, H. F. Bowyer, E. J. Brisley, Frank Brooke, E. G. Cameron, H. E. Carris, T. G. Carter, A. A. Chapman, H. H. Chapple, P. E. Cook, R. J. Cornall, Norman Cummings, H. J. Davidson, H. B. Davies, A. G. Dawson, J. F. Donovan, John Drury, S. H. Duncombe, John Eden, R. E. Edwards, W. N. T. Evans, E. R. Grag, G. W. Guiver, I. A. Heath, H. C. Hemmings, K. R. V. Hitch, C. V. Holloway, R. V. Hopper, J. A. H. Johnson, E. E. Jones, J. F. Kill, E. F. Lamprell, T. P. Leonard, Cyril Lloyd, G. S. Mace. Sgts.: Geoffrey Tinker. Nov. (Sen. Aug. 26). J. S. Cartwright. Nov. (Sen. Oct. 8). Cpls.: R. E. March. Nov. (Sen. Aug. 16). Nov.: R. G. Berry (Sen. Aug. 27), William Wriggison (Sen. Sept. 10), M. T. Burke (Sen. Oct. 6), A. H. Barker (Sen. Oct. 8), R. J. Anslow (Sen. Oct. 9), E. W. Baker (Sen. Oct. 13). Ldg. Acm.: R. E. Vale. Nov. 7 (Sen. July 18). Nov.: A. H. Anderson (Sen. Oct. 7), J. W. Brummitt (Sen. Oct. 15). Acm. 1st Cl.: Albert Scott, Oct. 10 (Sen. July 3). J. P. Traynor, Nov. (Sen. Sept. 29). Nov.: (Sen. Oct. 8) Edward Dean, B. W. Ellerington, D. G. T. Jones (Sen. Oct. 9), T. C. Griffith (Sen. Oct. 13). Acm. 2nd Cl.: J. E. N. Hayward, Nov. (Sen. Aug. 25). Leslie Elsey, Nov. (Sen. Oct. 13). F. H. Grimston, Nov. (Sen. Sept. 22). Nov.: (Sen. Oct. 6) L. F. Brooks, R. McCa. Campbell, H. W. E. Byrne (Sen. Oct. 7), Frank Bradley (Sen. Oct. 13), (Sen. Oct. 16) F. H. Gibbs, R. G. Hague, H. E. Duval (Sen. Oct. 29), P. A. Spence, Dec. 5 (Sen. Oct. 6). A. W. Springthorpe (Sen. Sept. 2). E. L. Burslem to be granted an hon. commn. as Wg. Cdr. Dec. 25.

W. H. Rann to be granted an hon. commn. as Flt. Lt. Dec. 20.

Flg. Off. (prob.) A. Holden to be confirmed in his appt. Sept. 2.

Plt. Offs. (prob.) to be confirmed in their appts. and to be Flg. Offs. (war subs.):—F. F. Pincock, Oct. Nov.: A. Duncan, R. B. Hirsch, R. Ruck, L. W. Andrae, R. A. Murrett, J. Atkinson, Dec.: H. L. R. Morgan, A. C. Waller, L. A. King (Sen. Nov. 12), L. H. Platts, V. C. Bennett, H. J. Boyden, F. Davies, F. C. Giles, M. L. Gillespie, W. J. Pilcher, C. Stuart-Harris, J. H. Wallis, A. H. Webb, P. L. Gauntlett.

Flg. Off. J. G. Burchett, M.C., to be Flt. Lt. (temp.) Dec.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—V. C. Cook, Sept. J. E. Trew, Oct. G. E. Moore, Dec.: B. I. A. Bell, C. H. Bcutflower, A. M. Fisher, T. H. Jefford, D. I. Songer, D. C. O. C. Stokes, T. Taylor, F. H. Wilson, J. B. Ainslie, W. S. Callander, W. B. Cooke, S. F. Forton, N. J. Gain, K. E. Godfrey, J. Grout, C. Harrison, A. Hendry, J. R. L. Hill, V. L. Jones, I. A. C. Lloyd-Williams, S. Morris, R. A. M. Roberts, G. E. Rochester, A. G. Wallis, P. A. Weatherall, C. M. Baird, W. E. G. Huggett, R. B. Laurie, D. J. Matthews, T. A. Matthews, G. Ramage, C. A. Riceman, W. W. Ringrose, J. Rowden, J. Sanderson, W. J. Sorrell, C. J. Spencer, E. A. R. Stamper, J. E. Sykes, H. Taylor, A. S. Trott, K. M. J. Tryon, L. G. J. Vickers, N. H. Wilder,

G. D. Brown, R. R. Taylor, H. C. Aldridge, T. Anderson, G. W. G. Ashby, A. K. Beke, L. Bennett, J. Booth, P. B. Brayshaw, L. E. A. Channell, R. J. Chapman, I. Chatterley, R. G. Clower, A. B. Coates, P. E. Darley-Jones, J. B. Dixon, J. W. Dowsett, R. G. Dunnett, D. S. East, L. R. Fennell, N. H. Ferguson, P. T. Fitzgerald, E. G. W. Ford, J. C. Freer, R. A. Garnett-Burrows, J. R. Gibbs, J. G. Glover, S. A. Grummitt, S. E. Grundy, N. R. Hale, E. G. Halls, W. F. Harley, H. T. G. Harlow, G. S. Harper, T. H. Harrison, J. E. Henwood, L. H. Hilsden, D. H. Holley, E. L. T. Hunter, R. G. Huxtable, W. H. Nunnerley, F. Oliver, S. A. Sutton, E. Waters, A. P. Wooldridge, G. B. Grenfell, E. A. R. Hubbard, A. H. Longhurst, L. M. Lewis, A. W. Oakley, L. J. Parmiter, H. L. K. Whitehouse, J. L. Aron, E. L. Barnett, C. A. Beaumont, F. G. Deavis, R. W. Berry, A. C. Bradbury, W. B. Brown, D. J. Buchanan, D. K. Buchanan, L. Bunting, L. Burke, J. C. Burley, P. A. Burr, R. G. Campbell, R. Chapman, E. E. Clark, R. J. W. Collinson, E. W. A. Colls, J. C. Connell, F. N. F. Cope, J. L. Cresswell, C. E. Crighton, J. Crowther, S. A. Curtis, A. Darby, W. N. Darrah, R. A. Death, N. V. Degville, L. E. Ditchfield, W. F. Dorr, A. E. Dukes, C. MacD. Duncan, F. E. Edbrook, C. E. Edwards, R. C. S. Ellison, H. Esslemont, D. W. Evans, G. L. Evans, G. T. Evans, S. E. Evans, M. W. Fell, E. S. Fenton, L. J. Flanagan, E. Foers, G. T. Foster, E. W. A. Foxen, D. G. Geddes, H. S. Gibbs, H. J. Gorman, S. J. Green, W. Guise, G. Haworth, J. G. Hillier, A. E. Hodges, J. W. Huntley, D. L. Ingram, B. M. E. Jones, E. M. Jones, G. V. Jones, J. Jones, D. Kidd, R. N. Kirkby, G. Lea, A. J. L. Lee, L. Legg, C. W. Levy, D. Lupton, J. G. M. Macdonald, J. Macdonald, R. K. L. S. Mainwaring, C. H. March, S. Milnes, R. C. Mountford, F. Murphy, P. G. A. Norman-Wright, N. G. Price, B. J. Roberts, L. D. Scott, J. Senior, B. Spooner, V. W. B. Sternberg, F. Strong, F. E. Wadsworth, E. Walters, E. J. W. Wilson, I. G. Wilson, E. P. Hancock, F. Dickson. Jan.: F. J. Anthony, P. R. Baenziger, S. Balin, R. A. Banister, G. M. Barnett, W. A. Bayley, F. N. Bolton, J. L. Bonnar, R. T. B. Braddick, L. E. Bradford, D. T. Brown, E. G. Bull, F. S. Castle, W. J. Chard, L. H. Clint, G. Conquest, J. G. Cowley, H. Croker, B. R. Croucher, R. W. H. Cunningham, A. E. Davies, C. G. V. Davies, E. V. Day, A. Dickinson, J. Duncan, T. D. Easton, J. C. Eden, E. B. Fairbank, A. R. Fasham, D. Follows, E. Foster, C. M. Gelder, J. A. George, E. J. Gibbons, B. R. Gibbs, W. C. Gobie, G. D. Green, D. Greenwood, P. T. Griffiths, W. B. Grimley, J. R. Harris, S. L. Harrison, C. B. Hill, H. L. Humphries, P. G. Jeffreys, J. M. Layton, J. S. Lougher, F. Mattar, C. P. Oldfield, A. R. W. Perks, J. V. P. Pillinger, F. Pratt, G. A. Reckless, J. Redman, J. A. Rennie, R. Revill-Johnson, J. D. Reynolds, E. L. Ridge, E. M. Rigby, J. G. Robbie, E. Rodgers, H. S. Rokeby-Johnson, R. W. Rose, A. W. Rudd, D. E. Samuel, N. V. Schofield, H. L. Shearn, E. Simmons, A. V. Skipper, F. T. Smith, H. C. Wilkinson, J. B. Hyman, J. Adone, E. B. Proud, T. A. St. John, A. L. E. H. Simon, A. P. Le M. Sinkinson, R. A. B. Stephens, H. B. Stratton, G. E. Swanson, D. R. J. Sydenham, C. O. Taylor, C. S. Taylor, J. N. Tinker, T. H. Williams, J. L. Wilson, J. H. Winkworth, J. E. Yarnall, P. M. Zabell, M. W. F. Tweedie. Jan.

Hon. Flt. Lts. to be granted the rank of Sqn.

Ldr. Dec. 27: T. J. Mammatt, R. C. Preston, F. P. Raynham, R. C. Warren.

Flg. Off. H. V. L. Tubbs to be transf. to the Gen. Duties Br. Sept. 18.

Plt. Off. D. A. Kingston relinquishes the rank of Flg. Off. at his own request and is transf. to the Gen. Duties Br. in the rank of Plt. Off. Dec. 7.

To be transf. to the Tech. Br.:—Plt. Off. C. S. Pollard (since prom.), July 15, 1940. Plt. Off. (prob.) H. D. Binyon, Aug., 1941.

Flg. Off. H. H. Davidson to be transf. to the Beacon Br. Jan. 2, 1942.

Plt. Off. (prob.) D. B. Richardson to be transf. to the Dental Br., and to be granted the rank of Flg. Off. Dec. 12.

Flt. Lts. to relinquish their commns. on account of ill-health and retain the rank of Sqn. Ldr.:—G. Henderson, Dec. 29, K. D. P. Murray, M.C., Jan. 6.

To relinquish their commns. on account of ill-health:—Plt. Off. (prob.) W. Thomson, Dec. 25.

Plt. Off. (prob.) G. W. Hodgkinson, Dec. 27.

Flt. Lt. C. C. Edwards, Dec. 31.

Flg. Offs. to resign their commns. and retain their ranks:—T. J. C. Baly, Dec. 7, J. G. B. Draper, Jan. 1, 1942.

Flg. Offs. to resign their commns.:—L. H. R. Lewis, Dec. 29, A. O. Bishop, Dec. 30.

The commns. of the fols. to be terminated:—

Plt. Off. (prob.) W. B. Clark, Dec. 25.

Act. Plt. Off. (prob.) A. C. Lewis, Dec. 26.

Plt. Off. (prob.) J. Robinson, Dec. 27.

The commn. of Plt. Off. (prob.) A. H. Gulland to be terminated. Nov. 20. (Subs. for notifi. of Nov. 25.)

The notifi. of Dec. 23 concern. Act. Plt. Off. (prob.) R. F. Lane to be cancelled.

AMENDMENTS.—In notifi. of Sept. 12 concern. Plt. Off. (prob.) K. D. U. Rogers, for Mar. 30 read Feb. 10.

Notifi. of Dec. 23, for C. Elliot read G. Elliot, and for P. G. Pescod read G. G. Pescod.

METEOROLOGICAL BRANCH.—Flg. Offs. to be

Flt. Lts. (temp.):—Jan.: M. K. Miles, N. B. Marshall, G. R. Macon, L. Marchant, F. J. Phillips, G. H. Jones, J. V. Meyer, L. W. Carroll, J. E. E. McLaren, J. R. Jenkins, E. A. Lunson, K. M. Cripps, G. Hastie.

TRAINING BRANCH.—To relinquish their

commns. on appt. to the Admin. and Spec. Duties

Br.:—Oct. 31: Act. Plt. Off. B. E. Clark, Act. Plt. Off. (prob.) B. T. Parkin.

Act. Plt. Off. (prob.) B. A. Pead, Nov. 28.

Act. Plt. Offs. (prob.) to resign their commns.:—

R. D. Eyles, Nov. 29. Dec.: R. J. Bastin, L. S. Deubert, G. W. Lee, Jan.

The notifi. of Apr. 18 and July 18 concern.

Act. Plt. Offs. (prob.) G. C. Gibson and J. C. Mason to be cancelled.

EQUIPMENT BRANCH.—To be Act. Plt. Offs. on

prob. (emergency):—Flt. Sgts.:—Dec.: (Sen. Oct. 17) J. A. Hatrick, C. D. Cummings. Sgts.: Dec.: C. W. E. Johnson (Sen. Oct. 3), A. G. Bowtell (Sen. Oct. 10), Cpls.: Dec.: W. J. H. Gold (Sen. Sept. 30), (Sen. Oct. 3) H. P. Gambrell, J. H. Rostance, T. F. Saunders, Albert Moore, L. F. R. Ray, (Sen. Oct. 17) H. J. Cherry, L. W. Rix, G. A. Lund (Sen. Oct. 31). Ldg. Acm.: Dec.: G. R. Brown (Sen. Aug. 22), H. J. Lawrence (Sen. Oct. 6), (Sen. Oct. 10) N. M. Normans, J. L. Johnson (Sen. Oct. 17) Edgar Brown, John Heywood, (Sen. Oct. 24) R. F. Long, Leslie Baume, C. A. A. Davis (Sen. Oct. 31), J. L. O'Connell, W. J. S. F. Smith. Acm. 1st Cl.: Dec.: Norman Coulthard (Sen. Sept. 24), F. L. Challen (Sen. Oct. 17), (Sen. Oct. 24) William Elliott, John Wheldon, S. G. Senior (Sen. Oct. 31). Acm. 2nd Cl.: Dec.: J. M.C. McGowan (Sen. Oct. 10), Arthur Copestick (Sen. Nov. 6).

Plt. Offs. (prob.) to be confirmed in their appts.,

Aug., and to be Flg. Offs. (war subs.), Sept.:—

J. W. Bowron, E. L. Taylor.

Plt. Off. (prob.) J. H. Brown to be confirmed

in his appt., Sept., and to be Flg. Off. (war subs.),

Nov.

Plt. Offs. (prob.) to be confirmed in their appts.,

Sept., and to be Flg. Offs. (war subs.), Nov.:—

E. M. Harris, J. McDonald, H. W. Pryor, A. F. J. Rixon, L. B. Spear.

Plt. Off. J. Beaton to be Flg. Off. (war subs.),

Dec., 1940.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—

July: A. G. Fraser, D. Regan, F. W. Holmes,

A. McEwan, Aug.: W. Davidson, F. R. Ostick,

Sept.: J. Newland, A. MacMillan, K. F. Rouse,

G. H. Harris, Oct.: L. C. Payne, D. Odell, W. H. Allen, R. A. Ayers, A. T. Izzard, H. Northfield,

J. C. Oaksford, H. C. Small, H. A. Spencer, A. E. Stewart, G. N. Stewart, E. G. Stockwell, B. Thorp,

C. B. Venus, L. E. Willott, V. R. Digby-Worsley,

W. E. George, H. I. Hall.

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—

Nov.: F. M. Atkinson, E. A. W. Auger, E. J. Bryant, L. M. Clarke, R. H. Dargfield, F. A. Elbourn, R. W. Elliott, C. C. Fitzroy, B. S. Fooks,

A. F. W. Frost, W. G. Gibson, S. O. Hesketh,

J. R. Higson, O. E. E. Hollmann, A. E. Jebson,

C. W. Johnson, A. M. Jones, L. J. Merchant,

A. Miller, C. J. N. Miller, H. L. Mitchell, H. G. Morgan, N. F. C. Murphy, N. N. Nichols,

D. Ogden, L. D. Papp, S. S. Parker, M. B. H. P. Petersson, G. W. Pierce, A. D. Polito, B. P. Rainbow, J. C. Sanders, T. U. P. Scott, R. V. Seddon, E. J. Smith, A. R. Spooner, A. MacG. Tough, O. F. Waters, P. A. Williams, G. A. Gence, S. A. R. Grimwood, G. Richardson, L. H. Acres, H. Alderson, W. E. Alexander, G. J. F. Allen, N. E. Allen, H. Armistead, J. M. Atkins,

N. M. Ayris, W. McW. Barclay, W. M. Barker,

R. J. Billington, V. J. W. Blackman, A. L. G. Blunden, J. Bond, H. A. Bone, H. Booth, F. S. Bourne, R. G. Bowden, E. L. Bowler, H. W. Bradley, K. I. B. Browne, N. E. Bubb, G. F. Burnley, P. Cass, W. D. Charles, W. D. Charlton,

J. L. H. Child, G. W. Clarke, R. Clay, J. N. Clements, A. B. Clutterbuck, J. F. College, D. L. Currie, B. G. Day, F. G. Day, N. M. Dow,

E. H. J. Doyle, P. G. Edington, J. C. Everitt,



A HAMPDEN FOR HAMBURG.—A ground crew loading a 1,000 lb. bomb on one of the Handley Page Hampdens of an Australian bomber squadron of the R.A.F. in preparation for a raid on Hamburg.

J. M. Foster, A. J. P. Fry, C. Garner, D. J. A. Garratt, C. A. Gates, R. W. Gibson, E. E. Ginnes, E. S. Glanville, J. N. Gooding, K. M. Hammerton, H. E. Hammond, R. W. G. Hampton, C. H. Hands, E. A. Harrison, E. S. Harrison, A. R. Hayward, G. P. Heppie, G. Higgins, C. Hodgson, A. Holt, W. G. Hoppitt, A. C. Horlock, J. Hutton, H. W. James, F. H. James.

(Subs. for notifi. of Dec.)
Flt. Off. D. L. McDonnell to be transf. to the Admin. and Spec. Duties Br. Oct. 25.

Sqn. Ldr. G. W. Hobbs to relinquish his commn. on account of ill-health and retain his rank. Dec. 27.

ACCOUNTANT BRANCH.—To be Act. Plt. Offs. on prob. (emergency):—Dec.: F. W. Adey, R. H. Alderton, S. B. Andrews, J. L. Banbury, N. T. Biddle, Philip Blackburn, H. G. Brain, Ernest Bucklow, F. A. Chapman, T. W. Clark, E. J. Corke, H. T. H. Cox, R. J. Davies, Clifford Derrick, S. E. Feast, E. A. C. Harris, G. T. Howells, F. I. A. Hughes, L. F. Hurling, F. A. Hurst, D. M. Ives, E. R. Jewell, A. D. B. Johnson, R. N. Liffon, Donald McGhie, H. H. Milton, Walter Morris, W. H. Pickard, M. L. R. Regan, E. A. J. Roberts, H. W. Roberts, J. T. Sharpe, F. G. Siver, C. R. Smith, R. F. L. Smith, B. R. H. Stokes, B. W. M. Warner, E. E. Watteue, N. J. War Robert Western, G. W. Wilding, S. K. Williams, J. E. Wimbush, W. C. Wood, C. A. Woollett, F. L. Wright, J. B. Wright, K. C. Wright, R. W. Yates.

Flt. Off. (prob.) W. J. Raby to be confirmed in his appt. Nov. 2.

Plt. Offs. (prob.) to be confirmed in their appts., Aug. 21, and to be Flt. Offs. (war subs.), Oct. 11:—J. E. Jenkins, W. R. Ward.

Plt. Offs. (prob.) to be confirmed in their appts., Sept. 21, and to be Flt. Offs. (war subs.), Nov. 2:—J. Graham, K. Gummersall, F. G. Salter.

Plt. Offs. (prob.) to be confirmed in their appts., Oct. 12, and to be Flt. Offs. (war subs.), Nov. 21:—Nov.: J. A. W. T. Morgan, T. Wilson.

Plt. Off. (prob.) C. G. Smart to be confirmed in his appt. Nov. 2, and to be Flt. Off. (war subs.), Dec. 14.

Flt. Off. A. G. V. Herbert to be Flt. Lt. (temp.). Dec. 1.

Flt. Off. P. Evers-Swindell to resign his commn. and retain his rank. Dec. 24.

MEDICAL BRANCH.—H. J. Goldring, M.B., B.Ch., to be Flt. Lt. (emergency). Nov. 28.

To be Flt. Offs. (emergency):—Nov.: J. D. Cambrook, M.R.C.S., L.R.C.P., L.D.S., M. J. Conlon, M.R.C.S., L.R.C.P., E. N. Gauld, M.B., Ch.B., I. D. Gebbie, M.B., Ch.B., D.T.M., and H. J. H. McCoy, M.B., Ch.B., D.P.H., A. N. Pickles, M.B., Ch.B., R. A. Smart, L.R.C.P., and S. L.M. D. T. Thomas, M.R.C.S., L.R.C.P., D.P.H., H. W. Wheathe, M.B., B.S., M.R.C.S., L.R.C.P., Dec.: K. S. P. Blatchley, M.B., Ch.B., H. W. Bradford, M.R.C.S., L.R.C.P., D.C.H., John Jones, M.R.C.S., L.R.C.P., J. K. Lotinga, M.B., B.S., L.R.C.P., and S. L.R.F.P.S., G. J. P. Rees, M.R.C.S., L.R.C.P., G. M. Wiley, M.R.C.S., L.R.C.P., Sydney Wetherell, L.M.S.S.A.

Flt. Offs. to be Flt. Lts. (war subs.):—C. M. Chambers, L.R.C.P. and S. L.R.F.P.S. Dec. 6. K. M. Willis, M.B., Ch.B. Jan. 7.

DENTAL BRANCH.—Flt. Offs. to be Flt. Lts. (war subs.):—T. N. Goodale, Copestake, L.D.S., Nov. 26. W. C. Hodge, L.D.S., Dec. 6. M. M. MacLair-Hillier, L.D.S., D.D.S. Dec. 27.

CHAPLAINS BRANCH.—To be Chaplains (emergency) with the relative rank of Sqn. Ldr.:—

The Rev. G. E. J. Foster, Sept. 23.

The Rev. D. L. Smith, M.A. Nov. 18.

The Rev. A. R. Fountain, BA Dec. 4.

The Rev. D. E. Hood. Dec. 10.

AUXILIARY AIR FORCE

BALLOON BRANCH.—Flt. Lt. E. Clayton to be transf. to the Admin. and Spec. Duties Br. June 23.

WOMEN'S AUXILIARY AIR FORCE

Sqn. Offs. to be temp. Wg. Offs. (Sen. Dec. 1):—Lady R. M. E. Welsh. Dec. The Hon. Margaret Forbes-Sempill. Dec.
Asst. Sec. Off. H. C. Tomlinson to resign her commn. Dec.
The commn. of Asst. Sec. Off. (prob.) A. Burns to be terminated. Dec. 9.

Air Ministry, January 20, 1942.

ROYAL AIR FORCE

GENERAL DUTIES BRANCH.—To be Plt. Offs. on prob. (emergency):—Wt. Offs.: Nov.: John Stenton. Dec.: C. E. Fooks. Temp. Wt. Offs.: Nov.: H. R. Walker, W. R. Morris. Plt. Sgts.: Nov.: N. T. H. Holland, J. F. L. Morton, Edward Tyrer. Dec.: A. N. Werner. Temp. Plt. Sgts.: Nov.: G. F. Cook. Dec.: L. V. Bachelier, B. D. Cayford. Sgts.: Oct.: K. J. P. Granger, A. C. Southward, H. L. Staples, M. G. Wakefield, D. A. Bowers. Nov.: L. H. Wood. Dec.: R. A. W. Scott, R. S. Ballantyne. Cpls.: Oct.: A. T. Webb. Nov.: J. N. Roberts, David Stothard. Ldg. Acm.: Nov.: D. A. White, E. L. Curtis, S. A. B. Gordon, G. R. Knight, N. J. Lloyd.

Plt. Offs. (prob.) to be confirmed in their appts.:—W. S. Hillary, Jan. 2, W. R. Greenslade, Jan. 10.

Plt. Offs. (prob.) to be confirmed in their appts., and to be Flt. Offs. (war subs.):—B. V. Manders, June 23 (Sen. June 4). A. M. Crouch, Oct. 15 (Sen. Oct. 9). H. S. Blakeman, D.F.M., Nov. 12 (Sen. Nov. 6). S. P. Wilkins, Dec. 22. A. F. Wallace, Dec. 23 (Sen. Dec. 18). A. J. Hawkins, D.F.M., Jan. 17 (Sen. Dec. 18).

Plt. Lt. W. B. Wight to be Sqn. Ldr. (temp.). Dec.

Flt. Offs. to be Flt. Lts. (war subs.):—Sept.: D. A. C. Keetings. Nov.: G. R. Avery, M. A. Bussey, H. P. Clark, D.F.C., N. P. W. Hancock, R. Hardy, A. J. Hill, R. I. C. Macpherson, J. H. T. Palmer, C. B. G. Peachment, E. D. Pennington, J. R. Ritchie, P. G. Royle, N. A. Savill, J. B. Smiley, R. C. Wright, D. MacDonald, E. H. Brown. Dec.: C. R. Hutton, N. E. H. Virgin, A. Warburton, D.F.C., A. W. Butler, J. C. T. Downey, G. T. Grant, P. Nixey, M. W. Hartford, D.F.C., T. C. Stanbury, P. K. Tripe, P. B. Balean, F. R. Bird, B. Clegg, D.F.C., J. F. Hatton, G. H. M. Riddell, C. B. Temlett, D.F.C., K. T. P. Terry, R. L. Wade, H. W. Allinson, K. G. Hart, Jan.: C. T. Kimber, D.F.C.

Flt. Offs. to be granted the rank of Flt. Lt. (war subs.):—C. F. Currant, D.F.C., June 23. P. W. M. Carlyon, D.F.C., Dec. 3.

Plt. Offs. to be Flt. Offs. (war subs.):—June: W. D. Allies. Dec.: J. Stewart (Lt. R.E., T.A.I.).

Plt. Offs. to be granted the rank of Flt. Off. (war subs.):—Nov.: A. G. Williams, W. R. Greenslade.

Air Cdre. R. G. Parry, C.B., D.S.O., is transf. to the Tech. Br. Apr. 24, 1940.

Sqn. Ldr. (temp. Wg. Cdr.) H. G. Lee, D.F.C., A.F.C., takes rank and precedence as if his appt. as Wg. Cdr. (temp.) bore date Nov. 11. Reduction from Dec. 5.

AMENDMENTS.—In notifi. of Dec. 9 concern. L.A.C. H. F. A. Ashford for H.F.A. read F. H. A. In notifi. of Dec. 23 concern. Wg. Cdr. J. G. Hawtrey for July 31 read Aug. 1.

TECHNICAL BRANCH.—To be Flt. Offs. on prob. (emergency):—Wt. Offs.: Oct.: J. G. Bishop (Sen. May 20). Oct.: N. R. E. Mattingly (Sen. Aug. 23).

Act. Plt. Offs. (prob.) to be Plt. Offs. (prob.):—July: A. V. R. N. Chart, R. C. Crosbie. Aug.: H. F. J. Couzens, L. M. Jenkins, R. N. Payne. Oct.: F. H. Spicer, J. W. Minors.

AMENDMENT.—In notifi. of May 30 concern. Flt. Lt. H. E. Brushwood, for Flt. Lt. read Squ. Ldr. and for Apr. 50 read June 1.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—To be Flt. Offs. on prob. (emergency):—Wt. Offs.: June: R. E. Eaton (Sen. May 30). July: Harry Barr (Sen. June 20). Nov.: Alexander

Smart (Sen. June 24), John Doig (Sen. Aug. 7), E. L. Thomas (Sen. Aug. 25), Andrew Young (Sen. Aug. 30). Nov.: R. S. Fulcher (Sen. Nov. 1).

To be Plt. Offs. on prob. (emergency):—Wt. Offs.: Nov.: Sydney Webb (Sen. July 14), (Sen. Aug. 6) R. W. Adams, Maurice Bartell, E. F. Long (Sen. Aug. 19), (Sen. Aug. 21) Leonard Baldwin,

Brynley Morgan, M. R. D. Pugh.

To be Act. Plt. Offs. on prob. (emergency):—Wt. Offs.: Nov.: C. F. Macey (Sen. Sept. 9), Dec.: E. H. Patison (Sen. Oct. 13).

Flt. Off. J. Digby is granted the rank of Flt. Lt. (war subs.), July 10.

Plt. Off. (prob.) F. L. Grisbrook to be Flt. Off. on prob. (war subs.), Nov. 1.

EQUIPMENT BRANCH.—Sqn. Ldr. J. W. Hustwaite to be Wg. Cdr. (temp.). Dec. 1.

Flt. Lt. A. H. Brown to be Sqn. Ldr. (temp.). Dec.

Flt. Off. R. M. Hall to be Flt. Lt. (temp.). Dec.

Plt. Off. R. J. Jenkins is granted the rank of Flt. Off. (war subs.), July 7.

Sqn. Ldr. M. G. Lees relinquishes the rank of Sqn. Ldr. at his own request and is transf. to the Gen. Duties Br. in the rank of Plt. Off. Dec. 21.

ACCOUNTANT BRANCH.—Plt. Off. (prob.) W. Hodson is confirmed in his appt., Nov. 22, and to be Flt. Off. (war subs.), Dec. 13.

Flt. Off. J. S. Doughty to be Flt. Lt. (temp.). Dec. 1.

RESERVE OF AIR FORCE OFFICERS

GENERAL DUTIES BRANCH.—To be Sqn. Ldrs. in class CC. Dec.: S. T. A. Mirrieles, A. G. Store.

To be Flt. Lts. in class CC. Dec.: W. J. Craxford, H. E. Forster, D. G. Harley, Edmund Luxmore.

J. R. Watkins to be Plt. Off. in class CC. Dec. 12.

Flt. Lts. to be Sqn. Ldrs. (temp.):—Dec.: N. F. Morris, E. W. Seymour-Hosley. Jan.: T. F. Steele, C. F. Fyfe.

Flt. Lts. to be transf. to the Admin. and Spec. Duties Br.:—C. H. E. Coles, Dec. 31. L. W. W. Modley, Jan. 5.

The notifi. of Nov. 25 concern. Flt. Lt. W. R. Bailey is cancelled. Notifi. of Dec. 23 refers.

AMENDMENTS.—The notifi. of Oct. 21 concern. Capt. W. A. M. Hanson, M.C. (R.M. ret.), should have appeared under the heading "Equipment Branch" and not "General Duties Branch."

In notifi. of Dec. 30, for Flt. Off. E. J. C. Wyllie read Flt. Off. E. I. C. Wyllie.

ADMINISTRATIVE AND SPECIAL DUTIES BRANCH.—Flt. Lt. R. F. Cathrow is transf. to the Balloon Br. Jan. 9.

EQUIPMENT BRANCH.—Flt. Lt. W. A. M. Hanson, M.C., to be Sqn. Ldr. Dec. 1.

ROYAL AIR FORCE VOLUNTEER RESERVE

GENERAL DUTIES BRANCH.—To be Plt. Offs. on prob. (emergency):—Dec.: W. R. N. Davidson, C. P. C. De Wesselew. Plt. Sgts.: Oct.: A. K. Grayson. Nov.: L. G. Turner. Dec.: J. A. Hughes-Rees, D.F.M., P. G. Neate, A. J. Beechey, J. D. Hart, L. G. Spong. Temp. Plt. Sgts.: Oct.: W. M. Perks, A. J. Savage. Nov.: R. B. Capes, Norman Taylor, D.F.M. Dec.: J. P. Graham, A. G. Lang, D. B. F. Nicholls. Sgts.: June: P. H. Bomford, George Gibson, V. E. G. Goss, Robert Houston, L. J. A. Whittaker, H. C. Kelsey, July: J. G. Cooper, F. C. Gill, E. H. Sayers, R. F. J. Swarbrick, W. S. Kersey, Harold Rathbone, H. D. Peele, H. F. Watson, F. G. Woosnam-Mills, J. R. Hastings. Aug.: R. E. Millichap, N. A. Burrows.

D. Hallisey, E. B. Twemlow. Sept.: F. D. P. Wicker, F. H. Kirston, T. M. Nicholls, P. J. M. Prangley, Alexander Smith, J. B. Smith, D. N. Purser, H. R. Cullen, C. H. Cleveland, D. H. Davidson, S. S. Dimond, M. W. Groves, A. C. Magor, B. S. Bridge, R. B. Harris, H. J. Ivory, Kenneth Lloyd, J. H. Woodcraft. Oct.: J. R. Falconer-Taylor, H. G. W. Turner, W. A. Walsh, I. C. Melkie, T. H. Green, A. F. MacQueen.

(The rest of the appointments under this date will be published next week).



A BOULTON PAUL DEFIANT NIGHT FIGHTER.

GERMAN AEROPLANES IN SERVICE—XXV

THE MESSERSCHMITT Me 109F1

(One 1,085 h.p. Mercedes-Benz D.B. 601 motor)

TYPE.—Single-seat fighter.

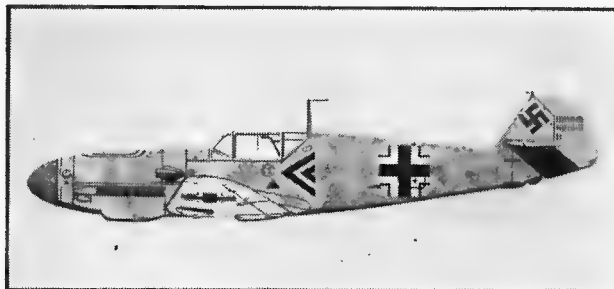
CREW.—One.

ARMAMENT.—One fixed 20 mm. cannon and two fixed machine-guns.

DIMENSIONS.—Span, 32 ft. 8 ins.; length, 29 ft. 8 ins.; height, 8 ft. 6 ins.; wing area, 173 sq. ft.

WEIGHTS.—Empty, 4,740 lb.; loaded, 6,090 lb.

PERFORMANCE.—Max. speed, 371 m.p.h. at 22,000 ft.; range, 370 miles at 307 m.p.h.; initial climb, 3,200 ft. per min.; service ceiling, 40,000 ft. Made by Messerschmitt A.G., Augsburg, etc. In production and in service.



145

THE MESSERSCHMITT Me 109F2

(One 1,150 h.p. Mercedes-Benz D.B. 601 motor)

TYPE.—Single seat fighter.

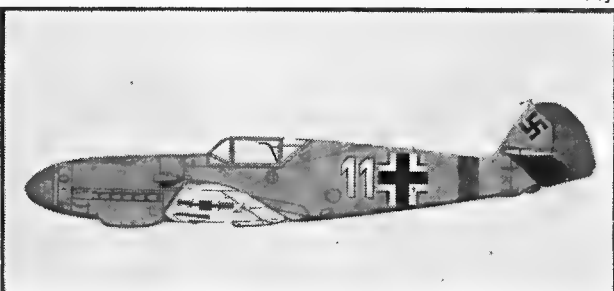
CREW.—One.

ARMAMENT.—One fixed 15 mm. cannon and two fixed machine-guns.

DIMENSIONS.—Span, 32 ft. 8 ins.; length, 29 ft. 8 ins.; height, 8 ft. 6 ins.; wing area, 173 sq. ft.

WEIGHT.—Loaded, 6,090 lb.

PERFORMANCE.—Max. speed, 375 m.p.h. at 22,000 ft.; initial climb, 3,200 ft. per min.; service ceiling, 40,000 ft. Made by Messerschmitt A.G., Augsburg, etc. In production and in service.



146

THE MESSERSCHMITT Me 110

(Two 1,150 h.p. Mercedes-Benz D.B. 601A motors)

TYPE.—Two-seat fighter-bomber and reconnaissance aeroplane.

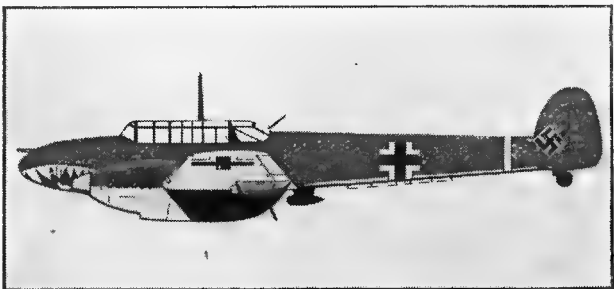
CREW.—Two.

ARMAMENT.—Two fixed cannon, four fixed machine-guns and one movable machine-gun. Later versions have heavier armaments and bombs can be slung externally under fuselage. The figures are from the Me 110c5 without bombs.

DIMENSIONS.—Span, 53 ft. 4 ins.; length, 40 ft. 9 ins.; height, 10 ft. 9 ins.; wing area, 414 sq. ft.

WEIGHTS.—Empty, 9,900 lb.; loaded, 15,290 lb.

PERFORMANCE.—Max. speed, 365 m.p.h. at 16,400 ft.; range, 565 miles at 301 m.p.h., or 1,500 miles at 215 m.p.h.; service ceiling 35,000 ft. Made by Messerschmitt A.G., Augsburg, and sub-contracted by Arado, Focke-Wulf and Gotha. In production. Many in service.



147

THE MESSERSCHMITT JAGUAR

(Two 1,150 h.p. Mercedes-Benz D.B. 601A motors)

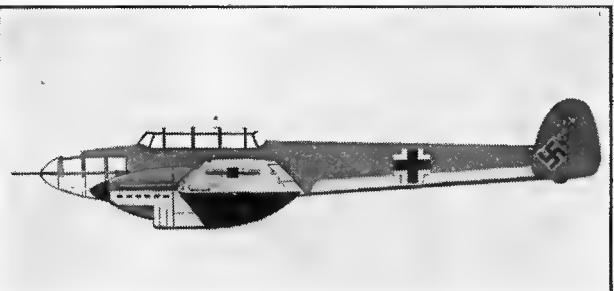
TYPE.—Reconnaissance bomber and multi-purpose aeroplane.

CREW.—Four.

ARMAMENT.—Four fixed machine-guns and two movable cannon. Wider fuselage than Me 110, with accommodation for internal bomb load.

DIMENSIONS.—Span, 53 ft. 4 ins.; wing area, 414 sq. ft.

PERFORMANCE.—Max. speed, 320 m.p.h. at 16,000 ft. Made by Messerschmitt A.G., Augsburg. Only a few built. Not in service. Under development.



148

THE MESSERSCHMITT Me 209

(One 1,450 h.p. Mercedes-Benz D.B. 603 motor)

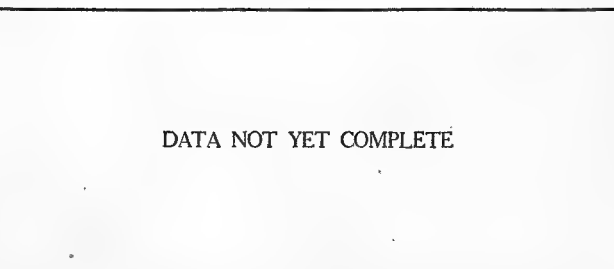
TYPE.—Single-seat fighter.

CREW.—One.

ARMAMENT.—Unknown, but thought to be six or eight machine-guns. Little data are available for this aeroplane except that it is a development of the Me 109. The following figures are from German sources:—

DIMENSIONS.—Span, 31 ft. 2 ins.

PERFORMANCE.—Max. speed, 398 m.p.h. at 21,000 ft.; service ceiling, 42,000 ft. Made by Messerschmitt A.G., Augsburg. Under development.



149

THE MESSERSCHMITT Me 210

(Two 1,450 h.p. Mercedes-Benz D.B. 603 motors)

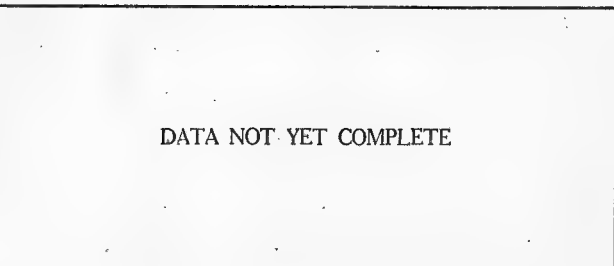
TYPE.—Fighter bomber.

CREW.—Two-four.

No precise data are available for this aeroplane except that it is a heavier version of the Me 110 equipped to carry bombs internally.

DIMENSIONS.—Span, 55 ft. 0 ins.

PERFORMANCE.—Max. speed, 285 m.p.h. at 18,500 ft. Made by Messerschmitt A.G., Augsburg. In production.



AIR TRANSPORT

Finland to Norway Again

A THRICE-WEEKLY service between Helsinki and Oslo was started by Aero O/Y (Finnish Air Lines) on Jan. 19. The route is by way of Pori and Stockholm, and the service leaves Oslo on Mondays, Wednesdays and Fridays, and Helsinki on Tuesdays, Thursdays and Saturdays.

Routes to Great Britain

A PPLICATIONS for new routes to Great Britain, by way of Foynes, were made by Pan-American Airways and American Export Airlines early in December. Pan-American asked for a temporary amendment to its trans-Atlantic certificate so that when a direct service to Foynes by the Northern route was not operated, one or more of the following could be used:—An extension from Lisbon on certain flights; a non-stop flight; or by way of Bermuda or Horta, or both.

American Export Airlines has asked for a permanent route between New York and Southampton, by way of Foynes, and a permanent route between New York and Lisbon. In addition, the Company has asked for a temporary permit to operate a service between New York and Foynes for five years, or until six months after the Secretary of War has notified the C.A.B. that the route is no longer needed for national defence.

An Aerodrome in Labrador

A NEW AERODROME, which is said to be an alternative aerodrome for trans-Atlantic operations, is being built at the head of Hamilton Inlet, Labrador. The aerodrome will occupy about 1,000 acres of what is now wooded land and muskeg, but the inlet extends back from the North-eastern sea coast of Labrador for about 150 miles, and the aerodrome is said to be free from coastal fogs. The new aerodrome will be about the same distance by air from Montreal as the present bases in Newfoundland.

A New American Company

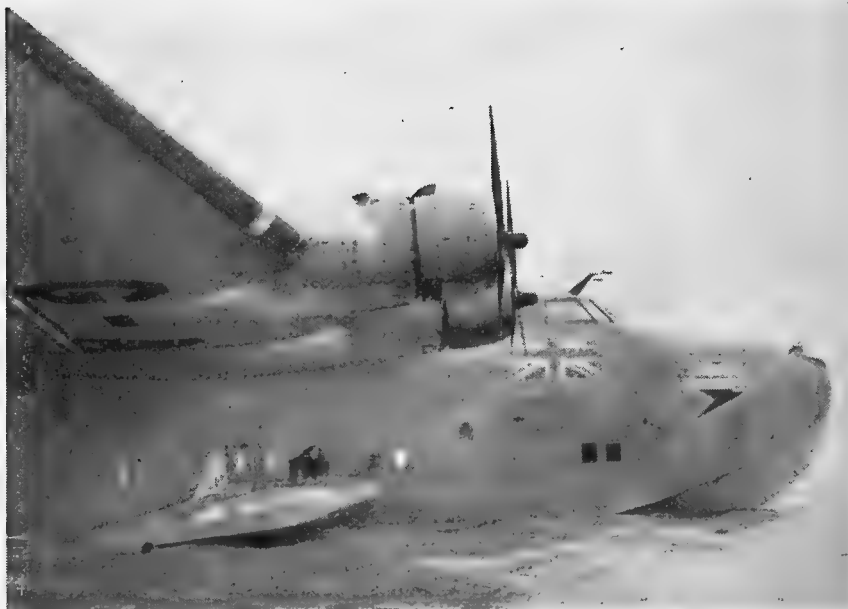
A NEW LINK between American air transport and railway interests is the announcement that T.W.A.—New England, Inc. (TWANE) has been formed by Transcontinental and Western Air, Inc., and the New York, New Haven and Hartford Railroad. The new company has applied for permission to provide air services in the Southern New England States of America between New York and Boston. The services would link 19 cities and the plans are for 21 scheduled round trips daily between New York and Boston and intermediate points.

In some of the localities the aerodrome facilities are not adequate for the type of aeroplane "Twane" proposes to operate (probably Douglas DC-2s or DC-3s), but the services are proposed as facilities become available.

Airgraphs

AIRGRAPH letters are now being sent from Canada to Canadians serving in the armed forces overseas. The letters are written on special Airgraph forms, similar to those used from Great Britain to the Middle East, and the cost is 3d. The Airgraphs are sent by air from the various Provinces in Canada to Toronto, where they are photographed on the special Airgraph film and the film is flown to Great Britain. There is no information as to whether this Airgraph service is sent by the Return Atlantic Ferry Service, or by Pan-American Airways. There has been no announcement yet of an Airgraph service to Canada.

More than 8,500,000 Canadian Airgraph letters have been



["Aeroplane" photograph

THE FLAG SHIP.—The Bristol, the flag ship of the fleet of three Boeing 314-As of British Airways.

exchanged between Great Britain and the Army Base Post Office in Egypt since the service was started last Summer.

War Consequences in the U.S.

SOME DETAILS of how the entry of the United States into the War affected civil flying during the first week or two have now reached this country. Scheduled air services were ordered not to accept Japanese passengers, and all air-line operations were subjected to a careful surveillance. Government priority for passengers travelling on Government "business" was introduced in January.

The Civil Aeronautics Board will continue to hear applications for new routes and business connected with the air lines, but only those new routes which will be of use to the national defences are expected to be authorised.

All private flying was grounded and all civil pilot licences were suspended, with the exception of those held by air-line pilots. The suspension of licences was lifted almost immediately in the following cases, provided a pilot could prove his American citizenship:—Pilots at schools giving training for the Government, including the Civilian Pilot Training Schools; pilots employed at aircraft manufacturing factories, and ferry pilots. Other pilots were to have their licences returned when they had given satisfactory evidence of identification and loyal American citizenship.

The ban on private flying was expected to be lifted, but, perhaps, most important of all, was the announcement that a Civil Air Patrol had been created by the Office of Civilian Defence, of which Mayor La Guardia is the Director. Details of the Civil Air Patrol are not yet available, but its main object is to enlist about 90,000 licensed pilots and 100,000 ground personnel for the duration of the War.

Deutsche Luft Hansa in 1941

TRAFFIC FIGURES of Deutsche Luft Hansa in 1941 were published recently by the Board of Directors and show an increase over those for the previous year, in spite of the fact that the Company had fewer aeroplanes at its disposal. On the regular scheduled routes 111,000 passengers were carried, as compared with 95,210 in 1940, and passenger-miles increased by 81.4 per cent.

Luggage flown increased from 439 tons in 1940 to 731 tons, and the Company was forced to restrict the amount of luggage to 30 kg. per passenger. Freight increased from 908 tons in 1940 to 1,521 tons in 1941, and there was an increase in ton-mileage of 93.8 per cent. This was better by 71.1 per cent. than that of the best traffic year—1936. The report states that the freight carried was mostly war materials, and that the routes to the Balkans, Italy and Norway were the busiest.

Mails increased from 1,509 to 2,480 tons, with an increase in ton-mileage of 94.7 per cent. The increase in the mails is said to be mainly because of the money orders sent to the Balkans and Scandinavia, and the letters for prisoners of war between Berlin and Lisbon.



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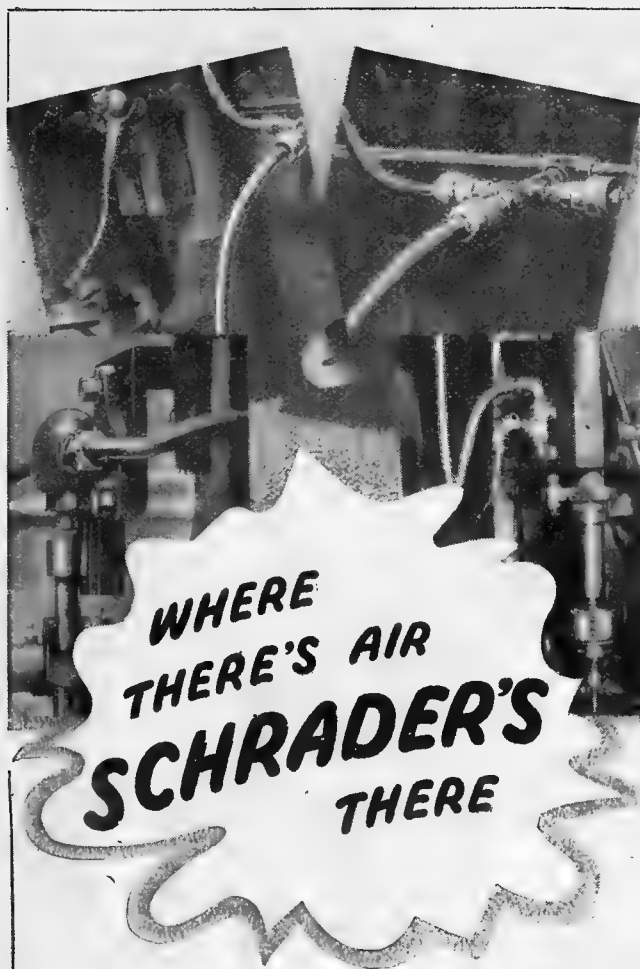
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["Aeroplane" photograph]

Atlantic Flying-boat

THE BRISTOL, the flag ship of the three Boeing 314-A flying-boats of the British Overseas Airways Corporation, paid a brief visit to a South-West Coast port recently. For the first time since British Airways took delivery of the Boeings in May last, we were then permitted to get an all too brief glimpse of one.

The Bristol was the first of the new Model A Boeing 314 flying-boats to be built. Three of the six originally ordered by Pan-American Airways were sold to the British Government at a cost reported unofficially to be \$1,000,000 each and were turned over to British Airways for war services.

The only structural difference in the Boeing 314-A is the step, which has been moved a little towards the stern. This change has done away with the porpoising to which the Boeing 314 was liable.

Other improvements include four 1,600 h.p. Wright Cyclone GR2600A5 motors, instead of the 1,500 h.p. Wright Cyclones, which drive new Hamilton Hydromatic airscrews of larger diameter and improved blade design, and bigger built-in fuel tanks in the sponsons. The take-off has been improved and the range increased from 3,100 to more than 4,000 miles. The

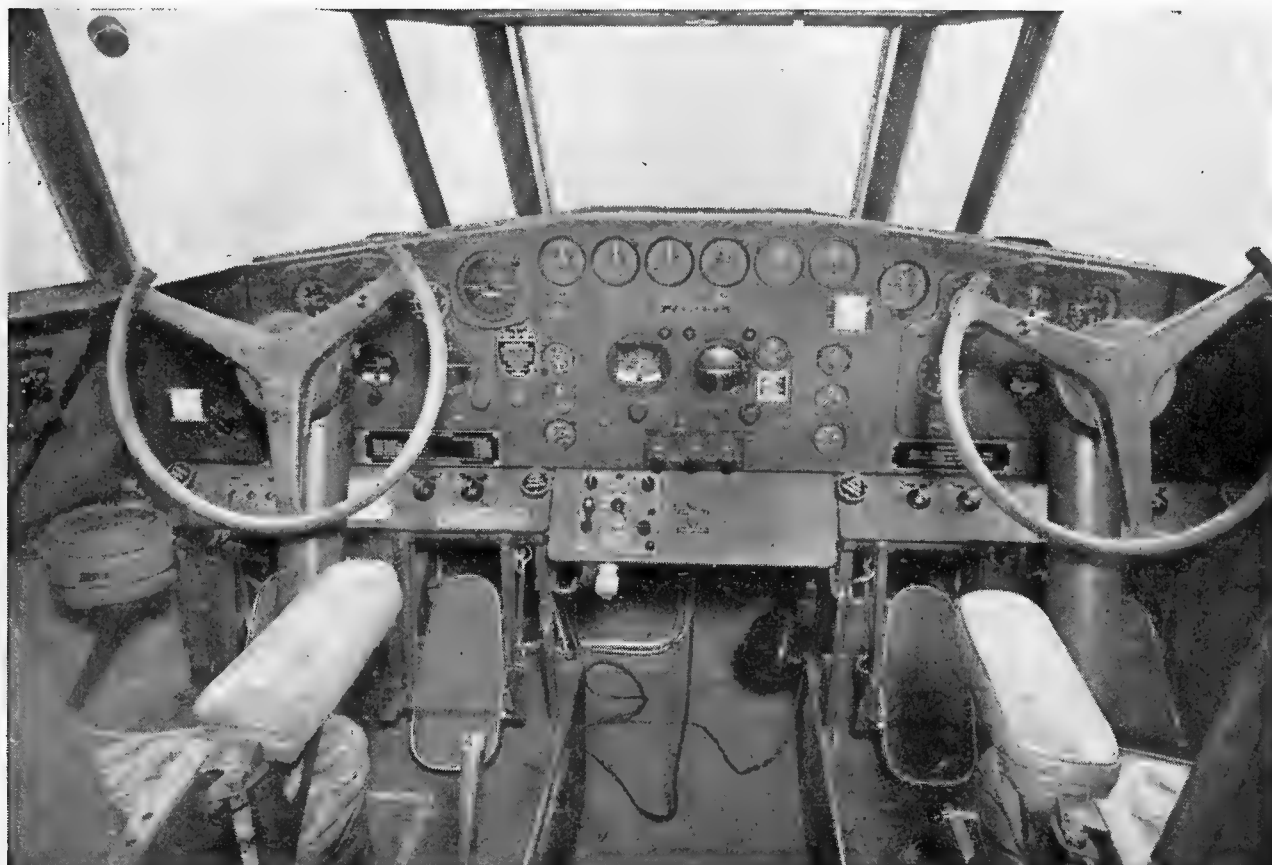
all-up weight is now 84,000 lb. and the cruising speed 140 m.p.h. Goodrich de-icing equipment is fitted.

The standard passenger accommodation of the 314-A is for 64 passengers, but the British Airways boats are fitted with 44 seats for day flights and 20 bunks and 16 seats for night flights, including the crew's quarters. A crew of 11 is carried.

The British Airways' crew, which had taken over the Bristol for its next outward flight and who were such excellent hosts to the visitors, were:—Capn. J. W. G. James; Chief Officer R. Needham; First Officers (and navigators) C. H. Pentland and J. T. Townsend; Radio Officers L. F. Mitchell and D. T. Roberts; Engineer Officers R. M. A. Godfrey and E. R. Fawcus; and the Purser, C. J. Bulloch. The two stewards were not on duty.

Approaching the Bristol one was impressed by its tremendous size, but missed the graceful lines of the Empire flying-boats. The sponsons make a useful landing stage. The approach of the launch and the embarkation of the visitors were quickly and efficiently made, even in a choppy sea, under directions from one of the officers stationed in the mooring hatch.

The main entrance door leads into the central cabin which



["Aeroplane" photograph]

THE BRIDGE.—The pilots' cockpit. The Captain sits in the left-hand seat. The pilots' throttle controls are on the left of the Captain and on the right of the co-pilot. The Sperry blind-flying panel and the automatic pilot are in the centre.



["Aeroplane" photograph]

THE FLIGHT DECK.—The Radio Officer's and Engineer Officer's stations. The radio set on the right on the top shelf is the radio compass. The Navigator has the port side of the flight deck to himself. Part of the door which gives access to the wing companion-ways to the engines may be seen on the extreme right with two of the petrol tank indicators above.

has an air of spaciousness. Looking aft down the corridor there is again that impression of great size. The lay-out of the cabins is the same as that of the Boeing 314. There are nine cabins, each comfortably furnished, and the bunks at night are arranged in tiers of two and are curtained off on the lines of the sleeping coaches on Canadian and American railways. Each bunk has a reading light and ventilator which are set flush to the cabin wall when not in use.

Cabin A, aft of the bow compartment where mail, freight and mooring tackle are stowed, is reserved for the crew and has four bunks at night. Cabin B contains the pantry on the port side and the men's dressing room on the starboard. The rest of the cabins are used by the passengers. The Purser's desk is curtained off on the port side in Cabin C.

Cabin I in the rear of the hull is known as the "honey-moon" cabin and is a self-contained and very comfortable room comparable with a cabin on "A" deck of an ocean liner. Mr. Churchill occupied this cabin in the *Berwick* on his flight back from America and apparently found it most comfortable.

All the cabins are upholstered with a particularly attractive material, which has a slightly raised pattern of a map of the World. The windows appear small as one approaches the Bristol, but, once inside the cabin and sitting down, the view from them is excellent.

The Bridge

The staircase to the flight deck leads out of Cabin B on the starboard side, and here again the immediate impression is of spaciousness, workmanlike efficiency and simplicity. The flight deck is similar to that of the first 314s, and the only changes British Airways has made has been in some of the equipment. Though the pilots' cockpit has an impressive array of instruments, they are not overwhelming, and by comparison with the stations of the rest of the crew the cockpit seems small. One interesting instrument not normally used on British civil aeroplanes is an Accelerometer, which gives the pilot a constant check on the stresses expressed in units of G's to which the aeroplane and its occupants are being sub-

jected when taking off, alighting, and in flight. This is particularly useful in bad weather.

Aft of the cockpit on the starboard side is the Radio Officer's table and equipment, including a radio compass which automatically records a bearing from any station. At present its use is limited by range, but a new radio compass which will give two bearings simultaneously has been developed.

Some changes were made in the radio equipment to bring it up to British Airways' standards. The main transmitter was moved up to the flight deck and a fixed aerial is used instead of a trailing aerial. Inter-communication can be maintained between members of the crew and between the flight deck, the mooring hatch and the sponsons during approach, alighting and mooring. Bendix radio equipment is used throughout.

Dials and Devices

Aft of the Radio Officer is the Engineer Officer's station, provided with a baffling array of instruments including throttles, gill cowling controls, airscrew feathering controls, and all the mechanical devices requisite to the operation of the flying-boat. The Engineer gives the Captain the signal for the take-off, and once in the air controls the motors and their adjustments and operation. Every two hours he makes a routine inspection of the engine cowlings through the bulkhead doors on either side of the bridge which give access to the wing companion-ways and each of the four motors. We gather that small adjustments are often needed during flights.

The Navigator's table takes up the whole of the port side of the flight deck, with his drift indicator at one end. The astro hatch is farther aft again through a bulkhead at the rear of the bridge, where more mails and luggage are stowed and the dynamos are placed.

All the instruments on the Bristol are electrically controlled on the Autosyn system and there are about 12 miles of wiring.

For the range of "more than 4,000" the fuel capacity is 4,480 Imp. gallons. The bulk of the petrol—100 octane—is carried in the sponsons, but the motors are run on the header



["Aeroplane" photograph

POWER.—The port motors of the Bristol looking out from the pilot's cockpit. The 1,600 h.p. Wright Double-Row Cyclone GR2600A5 motors drive Hamilton airscrews.

tanks in the wings. These hold 600 U.S. gallons each, and petrol is pumped up into the header tanks every hour. In practice the sponson tanks are never completely filled. If they were, the payload of the Boeings would be negligible.

British Airways has three Boeing 314-As and four crews for them. The Boeings are operated for the benefit of the Air Ministry, and only Government passengers and diplomatic mails are carried, though on certain trips recently some of the many refugee passengers who have been waiting at Lisbon for months have been flown to Foynes in the Boeings.

All the maintenance work is done at Baltimore, where British Airways has established a base with a number of engineers sent out from Great Britain. The Boeings are given a complete overhaul each time they arrive at Baltimore.

Flying Qualities Compared

The crew of the Boeing were enthusiastic about their new craft. They have all served on the Empire flying-boats and their estimate of the Boeing's qualities were the more valuable because of the comparison they could make with the Empire boats. In flight they say there is little difference in the noise in the cabins but the Boeing is perhaps a little rougher and the vibration more noticeable. They are particularly gratified with their own accommodation.

Capt. James said that in the air the Boeings have no vices, but that for taxi-ing and manoeuvring on the water the Empire boats were superior and more easily handled.

Once in the air the Boeings are flown on the graph system based on the constant angle of attack—that is, the relation of the aeroplane to the air when in flight. The graphs are worked out before each flight according to the weather reports, expected conditions of the flight, the load and so forth, but these graphs are checked by the crew every hour with the actual performance related to height and conditions of the flight. Navigation, especially in war-time, is perhaps the most important part of any flight, but Capt. James said they were never more than five miles out in their reckoning.

Radio silence is maintained by the flying-boats except for an occasional report of their position, but they are always listening in and fixes are worked out from intercepted messages, though in obtaining these fixes they have to be quite sure where they come from. The Radio Officer's job is even more complicated because most of the weather reports and messages

for them are sent out in code and the code may change frequently.

The crews of the Boeings do not stick to the same flying-boat. As a 314-A arrives in the United Kingdom its crew is relieved by the spare crew. The first crew has a short leave and then is ready to take over the next Boeing when it comes in. As a rule more time is spent in the United States than in Great Britain.

The loads on the Boeings vary according to the journey. From Lisbon to Foynes there may be 40 to 45 passengers; and on one occasion recently there were 54. Only about nine passengers can be carried on another stage.

What of the Future?

Unfortunately there has as yet been no opportunity to compare the Boeings with the only British flying-boat of anything like its size—the Short G-class flying-boat which was to have operated on the Atlantic routes, but which has not been given the same kind of trials by a commercial crew as the Boeings.

On the assumption that an aeroplane becomes obsolete after four years, one wonders what the successor of the Boeings will be. After the War the Empire boats will not be considered good enough for the Atlantic and the Boeings will need replacing. Pan-American Airways has shown a tendency to change over to landplanes for ocean flying, and though the order for a number of Lockheed Constellations may be held up now that the United States is at war, the plans are there for a start immediately after the War. Also, Pan-American must have gained many new ideas after more than a year of operation with the Boeing 307 Stratoliners on the South American routes. The Liberators and the Hudsons which have been ferried across the Atlantic for the past year have strengthened the case for landplanes over the Atlantic.

The Glenn Martin Company is said to have designed a 100-ton flying-boat for trans-Atlantic flying. Whether the future of commercial operations across the Atlantic is with flying-boats or landplanes, the operation of both should be simplified by the experience gained during the past two years of war-time flying and by the tremendous possibilities of Radiolocation as applied to civil flying.

The Empire flying-boats set a new standard of comfort for flying-boat travel, and the Boeings have raised the standard. With both types Great Britain has gained experience during difficult times. Somewhere, we hope there are new designs and plans for British Atlantic transports.

SIDELIGHTS FROM THE PAST—X

MR. H. G. HAWKER'S flight with Mr. H. Kauper in the Sopwith seaplane (100 h.p. Green motor) during the Circuit of Britain contest in 1913 was the first great British seaplane flight. The "Daily Mail" had offered a prize of £10,000 for a seaplane race around Great Britain over a course of 1,540 miles which was to be covered by the winning competitor within 72 hours of starting. Other rules were that the seaplanes must be all-British, a passenger must be carried, and five parts of the airframe and the motor must be stamped. Of these, two on both airframe and motor must be untouched on arrival at each control.

Attempts to win the prize could be made between Aug. 16 and 30, 1913. There were four entries. Of these, only Mr. Hawker in the Sopwith started. Col. Cody was killed shortly before, and both the Radley-England pusher biplane and the Short biplane had motor troubles.

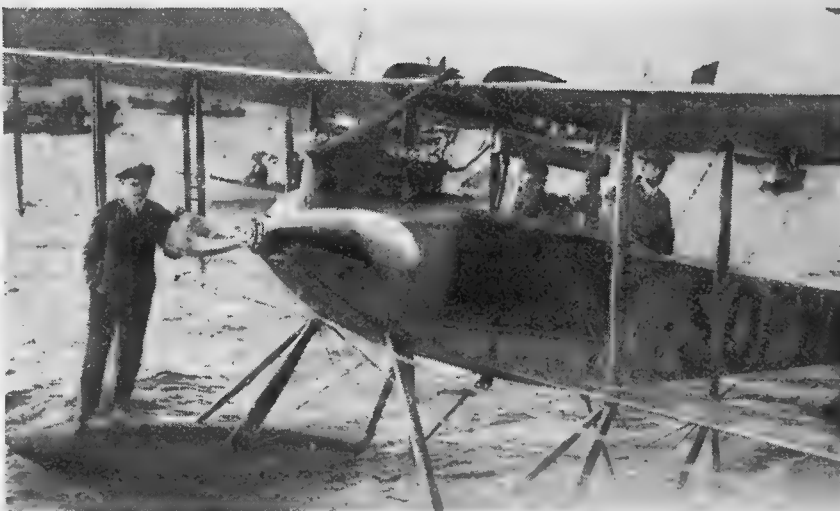
The course was divided into nine stages: Southampton—Ramsgate—Yarmouth—Scarborough—Aberdeen—Cromarty—Oban (by way of Caledonian Canal)—Dublin—Falmouth—Southampton.

Mr. Hawker, with Mr. Kauper as passenger, made the first attempt on Aug. 16 and got as far as Yarmouth, averaging 60 m.p.h. But at Yarmouth Mr. Hawker collapsed from the effects of a very hot sun and exhaust fumes. The Sopwith was shipped back to Cowes, where longer exhausts were fitted.

On August 25, Hawker and Kauper started again. On the first leg of the course to Ramsgate they averaged 55 m.p.h.; they made 65 m.p.h. to Yarmouth and 50 m.p.h. to Scarborough. Their troubles started between Scarborough and Aberdeen. They had arranged to refuel at Berwick but were forced down at Seaham harbour by a leak in the motor cooling system. Heat from the long exhaust pipes had perished a rubber connection. They were forced down again for the same reason at Beadnell, 20 miles South of Berwick and spent the night there. They had covered 495 miles and worked hard for 15 hours.

The next morning they set off again and, after a brief halt at Montrose, flew the 134 miles to Aberdeen non-stop at just under 60 m.p.h. The 94 miles from Aberdeen to Oban was the shortest stage but one of the most difficult, because the Caledonian Canal was bounded by steep hills the whole way. Flying conditions were bad, and for 2 hrs. 55 mins. the Sopwith was badly buffeted.

They stayed the night at Oban, but next morning discovered a leak in one of the floats. After spending an hour repairing this they took off again, but were forced down at Keills because of the water connection. After refuelling at Larne Harbour, they left at 11.00 hrs. for Dublin, but within sight of the control Hawker noticed a sudden loss of r.p.m. from the motor and decided to alight and investigate. While making gliding turns his foot slipped off the rudder bar and one wing of the Sopwith



THE SOPWITH SEAPLANE IN THE CIRCUIT OF BRITAIN.—AUGUST 25, 1913.

struck the sea, breaking a wing tip. Hawker was picked up unhurt but Kauper had a broken arm and his head was cut.

So ended one of the greatest feats achieved in the air at that time. They had flown 1,043 miles in approximately 20 hours' flying time at an average speed of about 52 m.p.h. Hawker was awarded a special prize of £1,000 by the "Daily Mail" and the Silver Medal of the Royal Aero Club. Kauper was given the Bronze Medal.

The photograph above shows the Sopwith seaplane at Scarborough during the second attempt with L. M. Lilley standing on the float, Kauper in the front cockpit and Hawker at the back.

H. G. Hawker, one of the greatest of the British pioneer pilots, was an Australian who joined the Sopwith Company in 1912. As an engineer he learned to fly at the Sopwith school at Brooklands. His Certificate was No. 297, dated September 17, 1912. Nine months later, as test pilot for the Sopwith Company, he set up four British flying records. During the War 1914-1918 he tested Sopwith aeroplanes, and in 1921 founded the Hawker Engineering Co., Ltd., with Fred Sigrist and T. O. M. Sopwith.

His attempt to fly the Atlantic in 1919 with Mackenzie-Grieve is a story in itself. All his life he had endured ill-health, and it was probably this which caused his death in 1921 while flying a new racing machine at Hendon.

Mr. Kauper came to England from Australia with Hawker and also joined the Sopwith Company as an engineer. During the War 1914-1918 he invented the Kauper gun-gear and later returned to Australia.

"Beau" Lilley as he was known, now Major Lilley, O.B.E., who sent us this picture, joined the Bristol Engineering Co. early in 1912 as an engineering student. The following year he joined the Sopwith Company and remained with it until the War in 1914.

SPORTING MEMORIES—LXXXII

ONE of the most popular victories in the history of the King's Cup Race was that of Capt. Geoffrey de Havilland, the age of 53, in 1933, flying the new D.H. Leopard Moth.



The D.H. Leopard Moth—1933.

The race was particularly interesting because it was flown from the new D. H. aerodrome at Hatfield and under new rules. There were four rounds, each over a different course and the total distance was 830 miles. Three Leopard Moths were entered. Capt. de Havilland won with an average speed of 139.51 m.p.h. and the others came third and sixth.

Six D.H. 85 Leopard Moths (one 130 h.p. D.H. Gipsy Major) were built early in 1933 as demonstration and experimental models and the first production models were not ready until the end of the year. The Leopard Moth was the replacement of the Puss Moth, to which it bore a marked resemblance, though the wings of the Leopard Moth were tapered and the fuselage was wider to accommodate two passengers side-by-side behind the pilot. The top speed of 140 m.p.h. was 10 miles faster than that of the Puss Moth.

Early in 1934 Mr. R. Rubin and Mr. K. F. H. Waller made a record flight to Australia and back in a Leopard Moth. Their time on the outward journey was 15 days and for the homeward flight 8½ days. A number of Leopard Moths are still flying on communications duties.

FORTHCOMING EVENTS

- Feb. 6.—**Huddersfield**.—S.C. No. 49 (Huddersfield and District).—Preliminary Test.—At A.R.P. Headquarters, South Parade.—19.30 hrs.
- Feb. 6.—**Huddesdon**.—S.C. No. 128 (Huddesdon).—Third Class Test.—At the Clock House.—19.30 hrs.
- Feb. 6.—**Leeds**.—S.C. No. 148 (Leeds).—Meeting at Y.M.C.A., Albion Place.—19.00 hrs.
- Feb. 6.—**Stapleford**.—S.C. No. 159 (South Erewash R.S.C.).—Meeting in the Constitutional Club.—18.30 hrs.
- Feb. 6.—**Hounslow**.—S.C. No. 164 (Hounslow, Feltham and District).—Meeting at the Lion and Lamb Hotel, High St.—19.00 hrs.
- Feb. 8.—**Odley**.—R.O.C.C. Branch 11 (Odley).—New Third Class Test.—Puzzle Sweepstake Competition.—Talk by W. S. Myall on "Identification of Aircraft by Sound."—At the Westbourne Hotel.—19.45 hrs.
- Feb. 8.—**Yorkshire**.—R.O.C.C. Branch 25 (Boroughbridge).—Second Round of Yorkshire Inter-Post Championship.
- Feb. 8.—**Newton Abbot**.—R.O.C.C. Branch 80 (Haytor).—Programme arranged by F3 Post.—Intermediate Test.—Talk by an Officer of the F.A.A.—Recognition Competition.—At the Grammar School.—15.00 hrs.
- Feb. 8.—**Worcester**.—S.C. No. 28 (Worcester).—Meeting at Marl Bank, Rainbow Hill.—11.00 hrs.
- Feb. 9.—**Walton-on-Thames**.—S.C. No. 96 (Walton and Weybridge).—Talk by P. Snow on "New American Aircraft."—Novelty Items.—At rear of "Duke's Head," 1, Bridge Street.—19.45 hrs.—All spotters invited.
- Feb. 10.—**Newport**.—S.C. No. 40 (Newport).—Meeting at the Newport Corn Exchange.—19.30 hrs.
- Feb. 11.—**Kentish Town**.—S.C. No. 16 (St. Pancras).—Instructional Class.—At the North Western Polytechnic, Prince of Wales Rd.—18.00 hrs.
- Feb. 11.—**Barking**.—S.C. No. 99 (Barking).—Meeting at the Barking Working Men's Club.—19.00 hrs.
- Feb. 11.—**Hackney**.—S.C. No. 181 (Group 3 S.C.).—Instructional Classes.—At the A.R.P. Headquarters, 219, Mare St.—18.30 hrs.
- Feb. 11.—**East Barnet**.—S.C. No. 168 (Barnet).—Meeting at the Anchor Hall, Plantagenet Rd.—15.00 hrs.
- Feb. 19.—**York**.—R.O.C.C. Branch 120 (Ebor).—Meeting at the City Arms Hotel, Cattle Market.—19.30 hrs.

Back Copies of "The Aeroplane"

AN APPEAL for back copies of THE AEROPLANE and for pictures of aeroplanes is made by Mr. D. Bristow, who is in charge of the training of spotters in a mixed H.A.A. Battery. If any reader cares to send them care of THE AEROPLANE they will be duly forwarded.

Mr. Fred W. S. Craig, of 16, Ewenfield Avenue, Ayr, Scotland, has copies of THE AEROPLANE for the whole of 1941, and asks for payment of postage.

Mr. W. M. Green has for disposal copies of Dec. 20 and 27, 1940 and for 1941, Jan. 3, 10, 17; Feb. 7, 14, 21, 28; Mar. 7, 14, 21, 28; April 4, 11, 25; May 2, 9, 16, 23, 30; June 6, 13, 27; July 11, 18, 25; Aug. 1, 8, 15, 22, 29; Sept. 5, 12, 19, 26; Oct. 10, 31; Nov. 7, 14, 21, 28; Dec. 5, 12, 19 and 26. He is also willing to send one reader post free his copies of THE AEROPLANE month by month on the sixth of the following month on receipt of a P.O. made out to the R.A.F. Benevolent Fund; the amount he leaves to the donor.

Mr. W. Halstead has for disposal copies for Aug. 15, 29; Sept. 5, 12, 19; Oct. 3, 10, 17, 24, 31; Nov. 7 and 14, which he will forward on receipt of postage.

BIRTHS

Archer.—On Jan. 25, in London, to Irene (née Nickolls), wife of Flg. Off. O. H. Archer, R.A.F.—a daughter.

Evans.—On Jan. 22, at Abingdon, to Jan (née Crossman), wife of Sqdn. Ldr. Paul Evans—a daughter (prematurely).

Forward.—On Jan. 27, at Fulmer, to Peggy (née Powel), wife of Plt. Off. C. W. Forward, R.A.F.V.R.—a son.

Graham.—On Jan. 22, in London, to Norah (née Thomson), wife of Plt. Lt. Ian Graham, R.A.F.V.R.—a daughter.

Lomax.—On Jan. 22, at New Delhi, to Betty, wife of Plt. Off. P. W. Lomax—a son.

Scott.—On Jan. 25, at Silchester, to Marguerite, wife of M. D. L. Scott, R.A.F.V.R.—a daughter.

Stewart.—On Jan. 23, at Farnborough, to Anthea (née Loveless), wife of Wng. Cmdr. C. M. Stewart, R.A.F.—a son.

Trewin.—On Jan. 23, at Harrow, to Bettie (née Melhuish), wife of F. T. Trewin, R.A.F.—a daughter.

Whitehead.—On Jan. 26, at Lincoln, to "Nick" (Edith Marie), wife of Wng. Cmdr. J. B. T. Whitehead, R.A.F.—a son.

Whiting.—On Jan. 21, at Welwyn, to Mary (née Hunter), wife of Plt. Off. John Whiting, R.A.F.V.R.—a daughter.

FORTHCOMING MARRIAGES

Campbell — Kinahan.—The engagement is announced between Sqdn. Ldr. A. M. Campbell, R.A.F.O., third son of Mr. and Mrs. D. A. Campbell, of Underriver House, near Sevenoaks, and A/S/O Pamela, Hazel Kinahan, W.A.A.F., second daughter of Mr. and Mrs. D. B. Kinahan, of Hurlingham, S.W.6.

Cockburn — Lator.—The engagement is announced between Lt. (A) R. C. Cockburn, D.S.O., R.N.V.R., son of Col. Cockburn, C.B.E., of Calcut, Reading, and Lorraine, daughter of the late Mr. W. E. Lator, of Huntingdon.

Fraser — Ormerod.—The engagement is announced between Flg. Off. A. M. Fraser, R.A.F.V.R., youngest son of the late Mr. G. H. Fraser and of Mrs. Fraser, of Birkenhead, and Alice Wishart Ormerod, daughter of the Rev. Professor and Mrs. J. C. Ormerod, of Bradford.

PERSONAL NOTICES

Needham — McHardy.—The engagement is announced between Flg. Off. R. T. Needham, R.A.F.R., and of British Overseas Airways, and Elma S. McHardy, Q.A.I.M.N.S.R., youngest daughter of W. A. G. McHardy, of Vancouver, B.C.

Sims — Hexton.—The engagement is announced between Plt. Off. G. W. Sims, R.A.F.V.R., only son of Mr. S. M. Sims and the late Mrs. Sims, of Epsom, and Betty, younger daughter of Mr. and Mrs. R. Hexton, of Cheam, Surrey.

MARRIAGES

Abrahams — McLeay.—On Jan. 10, at Yateley, Sqdn. Ldr. R. J. Abrahams, R.A.F., younger son of Mr. and Mrs. J. G. Abrahams, of Eastbourne, to Joyce, daughter of Dr. and Mrs. C. W. McLeay, of Yateley, Hants.

Adams — Harrison.—On Jan. 7, at King's Worthy, Plt. Off. Kenneth Adams, R.A.F.V.R., younger son of the late Mr. W. G. Adams, and Mrs. Adams, of Belfast, to Patricia, eldest daughter of Mr. and Mrs. Christopher Harrison, of King's Worthy, Winchester.

Barnham — Frith.—On Jan. 24, at Redbourne, Plt. Off. Denis Barnham, R.A.F.V.R., son of Mr. and Mrs. L. Barnham, of Exmouth, to Diana, daughter of Brig. and Mrs. O. T. Frith.

Brook — Bell.—On Jan. 26, at Chollerton, Lt. (A) T. C. Brook, R.N., elder son of Mr. and Mrs. C. P. Brook, of Red Deer, Alta, Canada, to Elizabeth Ann, second daughter of Lt.-Col. and Mrs. H. S. Bell, of Bavington Hall, Northumberland.

Cowell — Read.—On Jan. 24, at Streatham, Aircraftman J. F. Cowell, son of the Rev. J. B. and Mrs. Cowell, to Margaret Gwendoline Read, eldest daughter of Mr. and Mrs. Charles Read.

Dedman — Stone.—On Jan. 24, at Norbiton, Sgt. Plt. Dennis Dedman, R.A.F.V.R., son of Mr. and Mrs. M. C. Dedman, of Nuanetsi, Rhodesia, to Leonora, only daughter of Mr. and Mrs. G. A. Stone, of Sutton.

Edwards — Janson.—On Jan. 27, at Kingston, Lewes, Plt. Off. J. H. Edwards, R.A.F.V.R., son of Mr. and Mrs. L. R. Edwards, to Eileen Barbara Janson, daughter of Mrs. E. K. Marsh, and the late Percy Janson, of Lloyd's.

Edwards — Pritchard.—On Jan. 15, in London, Wng. Cmdr. M. B. Edwards, R.A.F., eldest son

of Dr. F. I. G. Hunter-Edwards, of Cheadle, to Sylvia, daughter of Mr. and Mrs. W. E. Pritchard, of London and Seaton.

Gordon — Allingham.—On Jan. 24, at Blindley Heath, Flg. Off. John Gordon, M.R.C.S., R.A.F.V.R., to Mabel Anne Allingham.

Heslop — Smith.—On Jan. 15, at Hornchurch, James Heslop, R.A.F., eldest son of Mr. and Mrs. J. Heslop, of Gidea Park, to Kathleen, eldest daughter of Mr. and Mrs. K. A. Smith, of Hornchurch.

Howard — Allen.—On Jan. 25, at Eltham, Plt. Off. J. P. Howard to Betty Allen, both of Eltham.

Hicks — Garlick.—On Jan. 26, in London, Plt. Off. G. L. Hicks, R.A.F.V.R., only son of the late T. E. Hicks, and Mrs. Huffam, of Epsom, to June Myrtle, A. S. O., W.A.A.F., elder daughter of Dr. G. H. Garlick and Mrs. Myrtle Garlick, of London.

Macdonald — Kirkham.—On Jan. 10, in London, Colin Macdonald, R.A.F.V.R., second son of Mr. and Mrs. R. Macdonald, of Cheam, to Margaret Isabel, only child of Mr. and Mrs. T. Kirkham, of Northwood.

Morris — Pritchard.—On Dec. 13, 1941, at Llangollen, Flt. Lt. G. S. Morris, R.A.F. (Tech.), to A. S. O. Jean Mary Pritchard, W.A.A.F., younger daughter of Mr. and Mrs. J. T. Pritchard, of Wallasey and Llangollen.

Ridsdale — Frank.—On Jan. 24, at Holy Trinity Church, West Hill, S.W.15, Sqdn. Ldr. P. G. M. Ridsdale, R.A.F., son of Mr. and Mrs. P. L. B. Ridsdale, of Cawnpore, India, to Lorna, second daughter of Mr. and Mrs. T. Peirson Frank, of Putney, S.W.15.

Scott — Nicoll.—On Jan. 24, at Remenham Parish Church, Flt. Lt. R. C. Scott, R.A.F., to Monica Benson, elder daughter of Lt.-Col. and Mrs. F. B. Nicoll, of Henley-on-Thames.

Smith — Cox.—On Jan. 18, at Timsbury, Somerset, Flt. Lt. J. E. Smith, M.B., Ch.B., of Pensford, to Monica Joyce Cox, of Timsbury.

Trevelyan — Overend.—On Jan. 9, in London, Sqdn. Ldr. B. Trevelyan, R.A.F.V.R., to A/S/O M. G. Overend, W.A.A.F.

Westbrook — Graham.—On Jan. 9, 1942, at Arlington, Virginia, U.S.A., Trevor C. L. Westbrook, of London, to Sheila Graham, of New York City.



TRAINING IN ENGLAND.—New Zealand pilots in training for the Fleet Air Arm in a West of England camp. Behind them is a Fairey Fulmar.

New Patents

APPLICATIONS ACCEPTED

- 542,385.—H. R. Wilson.—Aerial barrages.—June 21, 1941.
- 542,422.—Constant Speed Airscrews, Ltd., and F. G. Marshall.—Aircraft.—Aug. 24, 1940.
- 542,427.—J. H. Robertson.—Heating systems for aircraft and the like.—Dec. 9, 1940.
- Opposition period expires Mar. 21, 1942.
- Printed specifications available Feb. 5, 1942.

Company Notices

CHANGE OF NAME

- Airwork Engine Service Ltd.**—Name changed to H. and W. G. Andrews Ltd. on Dec. 29, 1941.
- Thermo-Plastic Products, Ltd.**—Name changed to Thermo Plastics, Ltd., on Jan. 9, 1942.
- Woodason Aircraft Models, Ltd.**—Name changed to Morson Manufacturing Co., Ltd., on Jan. 13, 1942.

SATISFACTION

Redwing Aircraft Co., Ltd.—Satisfaction on July 4, 1939, of charge dated Nov. 2, 1938, and reg. Nov. 5, 1938. (Notice filed Jan. 21, 1942.) According to the register of mortgages the charge registered Nov. 5, 1938, originally secured all moneys due to bank.

The fact that goods made of raw materials in short supply because of war conditions are advertised in this journal should not be taken as an indication that they are necessarily available for export.

CORRESPONDENCE

When Modifications Dam the Stream

I READ with great interest the recent leading article by Sir Charles Bruce Gardner dealing with Maximum Quality v. Maximum Quantity. This is, indeed, a question of paramount importance, and in its correct solution lies the answer to overwhelming air-supremacy.

It has often occurred to me that production could be stepped up and technical supremacy maintained by applying a scheme of simplification to the production of certain types of aircraft.

To illustrate my meaning, let us examine the fighter. To-day the fighter is expected to undertake all manner of operational duties, which may include anything from local defensive action to a full-scale offensive sweep. The range covered by these two extremes suggests that air operations demand varying standards of efficiency from the aircraft taking part and, therefore, it is fairly certain that a considerable percentage of our fighter force seldom have their capabilities fully exploited.

In view of this, would it not be possible to take a machine of good basic design, strip it of all its refinements and unessential equipment, leaving it, of course, with adequate performance and fire-power. Such a fighter could be used very effectively on certain operations—Home Defence, for example—and surely the quantity aspect would more than offset the slight decrease in efficiency.

I do not suggest that the design of this machine should be frozen for an indefinite period, but its development could proceed at a much slower and less severe rate, thus giving ideal production conditions to any plant responsible for its output.

Remembering the Battle of Britain, we can easily anticipate the result if the enemy were confronted with a fighter force comprising our latest types, supported by very large numbers of effective, if not quite so "pukka," aircraft.

Although such a scheme lends itself more readily to fighter production, it could probably find similar application in the production of bombers. G. POWELL.

[The mixed force already exists. Alongside the newer fighters are the older types. They remain in service for a long time after the new ones begin to appear. Therefore, Mr. Powell's basic argument is sound, but his proposal does not define "adequate performance and fire-power," nor does it consider those modifications which concern efficiency in operation rather than performance. We doubt if any general rule can cover all cases. There must be a compromise between desirable modifications, and their cost in the form of delay.



PICNIC PARTY.—A group photographed at the Blair Atholl Party in 1907. From left to right (top row) Mr. P. R. Gurr, Sapper Stevens, R.E., Sapper Hale, R.E., Sergt.-Maj. Powell, R.E., Mr. F. Smith; (seated) Sapper Wells, Lieut. Westland, R.E., Corp. Hughes, R.E., L/Corp. Ridd, R.E.

A time limit for "mods." might be set, but it would have to be fixed so that the recommendations of the pilots are given due weight. Nor should we forget that versatility is one of Air Power's greatest assets.—ED.]

The First Pioneers

AS I happen to be one of the party which was engaged on the first trials of the Dunne machine at the Blair Atholl Party in 1907, I am able to confirm the names given in the letter of "An Old Hand," as composing the group in the picture you published in THE AEROPLANE of Dec. 19, 1941.

The enclosed photograph taken on the same day by Lieut. Dunne includes Lieut. Westland, R.E., who was also with the Party and assisted with the man-lifting glider experiments.

P. R. GURR.

Economy in Bombing

THE FULL CASE for the light bomber cannot be stated in a short letter, but I feel that Mr. Richardson's letter supporting the big bomber policy requires an answer. To his advantage Mr. Richardson seems to have completely ignored the most important aspect of the situation, namely, that of economy under War conditions.

If a Stirling and three Marauders take part in a raid, what concerns the Air Staff most, granted an even standard of bombing accuracy, is just how many aeroplanes will return. If the Stirling fails to return then it is obvious that it cannot raid Germany again. But it is unlikely that all three Marauders will be lost and in the opinion of the light bomber protagonist it is unlikely that any of the Marauders will be lost. In fact, they will live to bomb again.

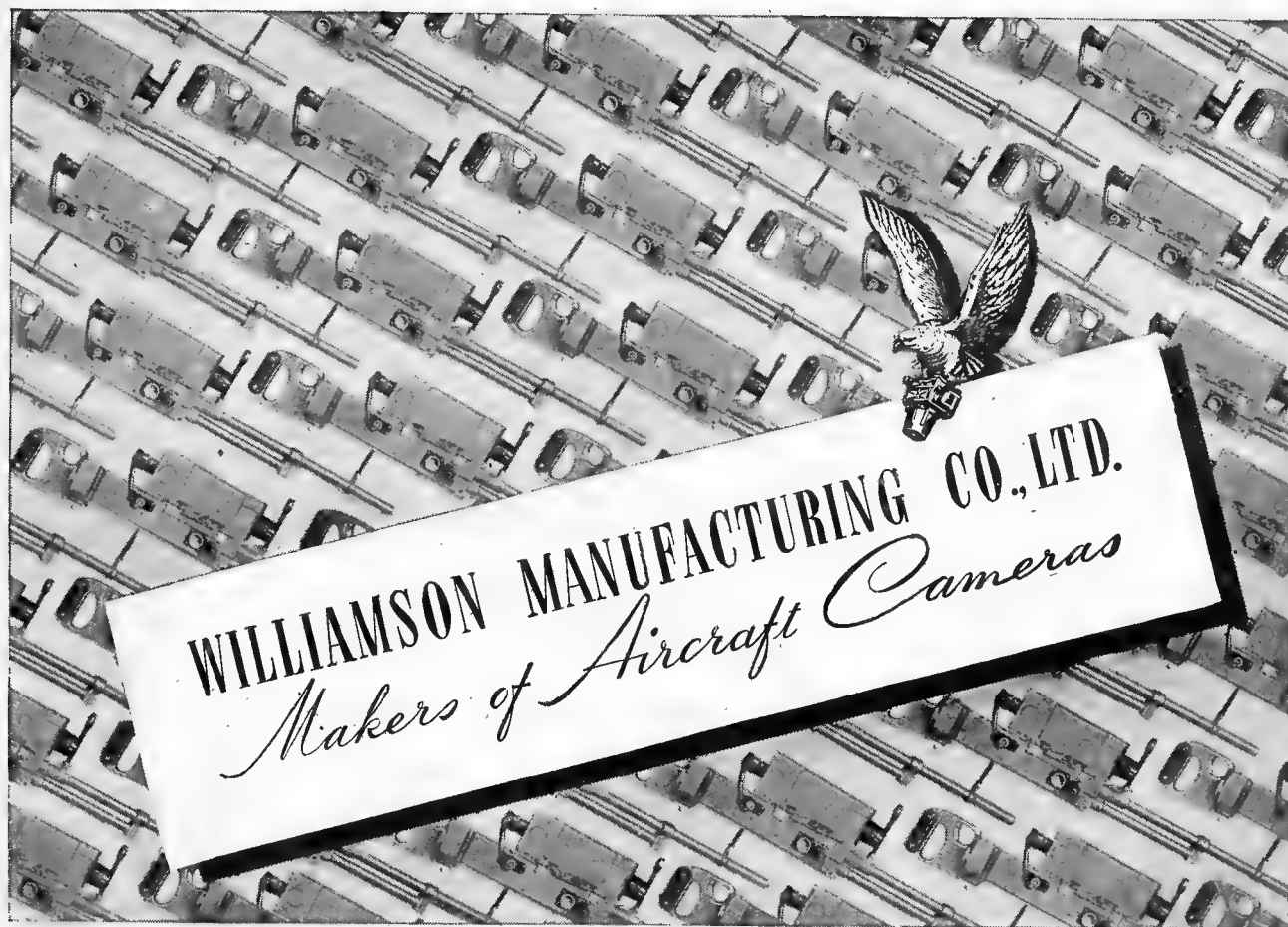
In answer to Mr. Richardson's last paragraph I would point out to him that the policy of daylight bombing by unescorted heavy bombers was given up by the R.A.F. after only a few months of war, and while German fighters may have intercepted a stray Stirling now and again and often come off the worst it would be interesting to know how many Blenheims, in production since 1936, have escaped even interception by their speed and agility.

In fact there is a definite use for both heavy and light bombers, but, in my opinion, the value of the heavy bomber has been overstressed, although I would not go so far as THE AEROPLANE, which, in April, 1940, said: "The policy of the big bomber, which we believe to be utterly and absolutely wrong . . . may have more to do with the winning or losing of this War than people realise. . . ."

And, in answer to the Editorial comment, I would point out that the heavy bombers, while they do not cause such congestion on aerodromes, do require long and carefully prepared runways, and not only are these easily damaged but also one Stirling cannot be "dispersed" on a landing ground, while an equivalent number of smaller bombers can be scattered to the full extent of the aerodrome. J. ALSTON.

[The big bomber is economical in crews. It has occasional special functions to perform and these demand bigger loads than the smaller types can carry. Its ratio of useful load to total load is better than that of the two-motor class. We have still to see whether it is more prone to damage than the smaller target.—ED.]



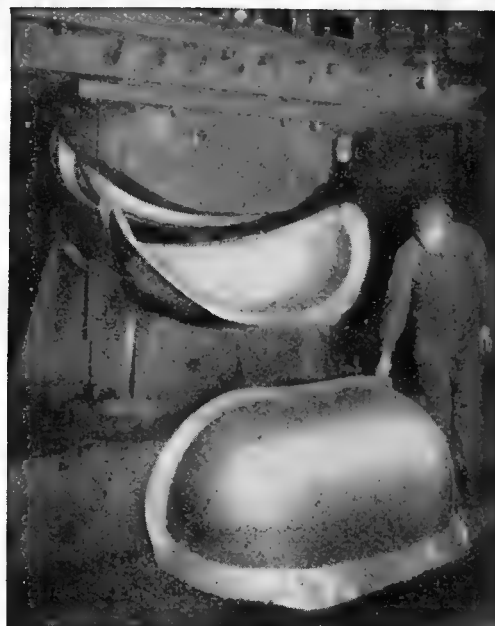


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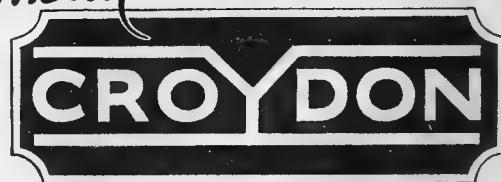
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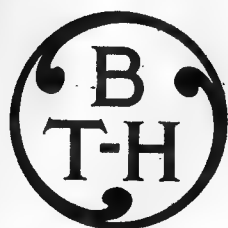
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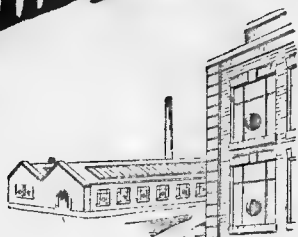
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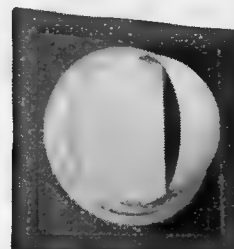
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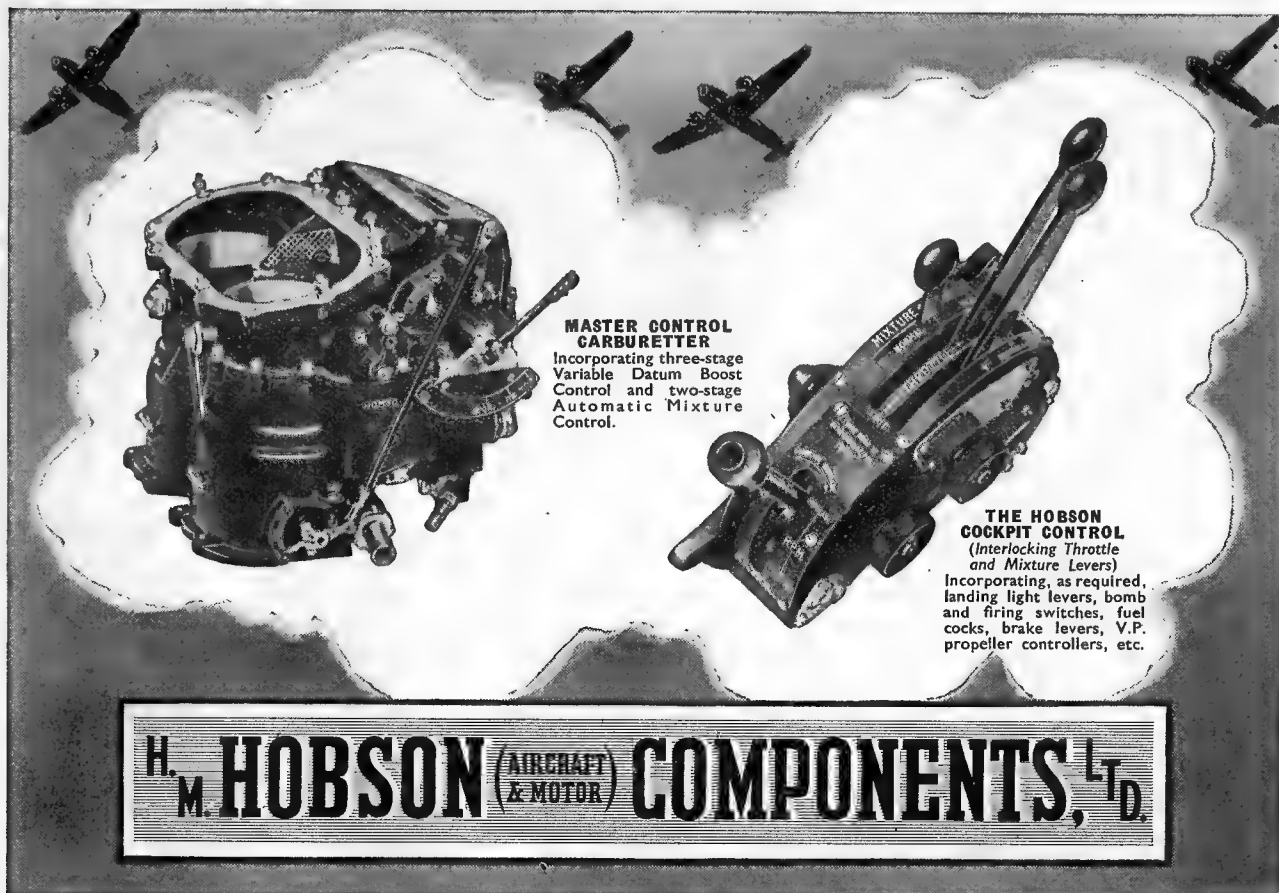
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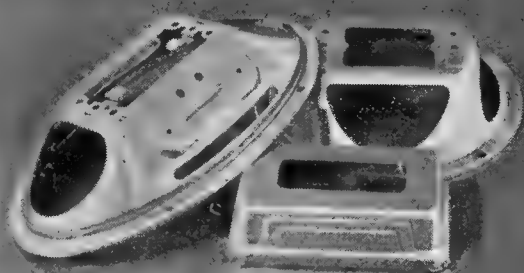
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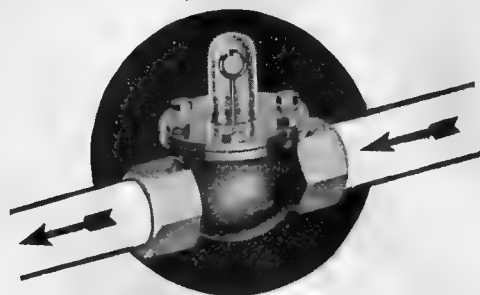
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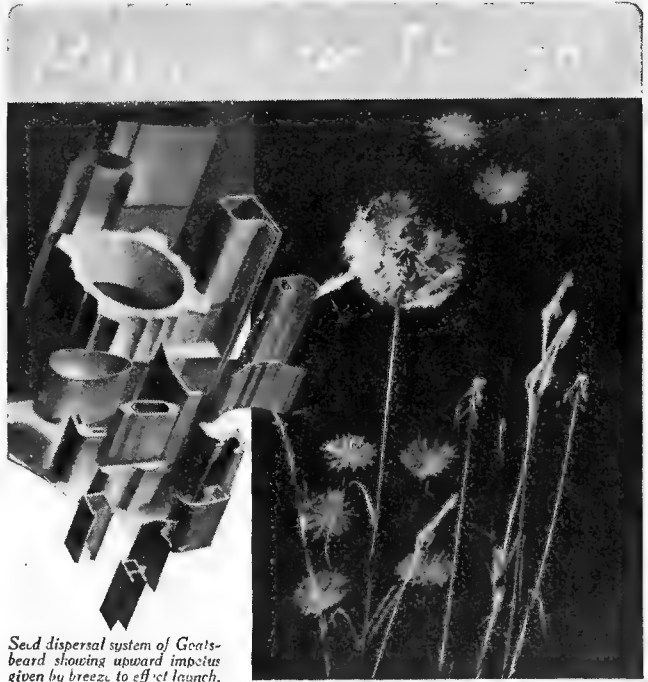
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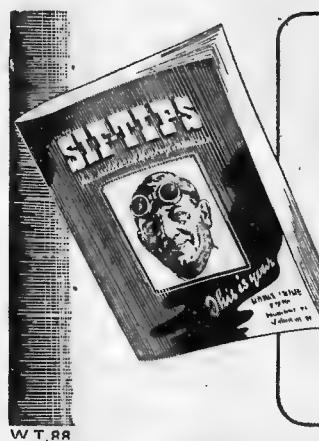
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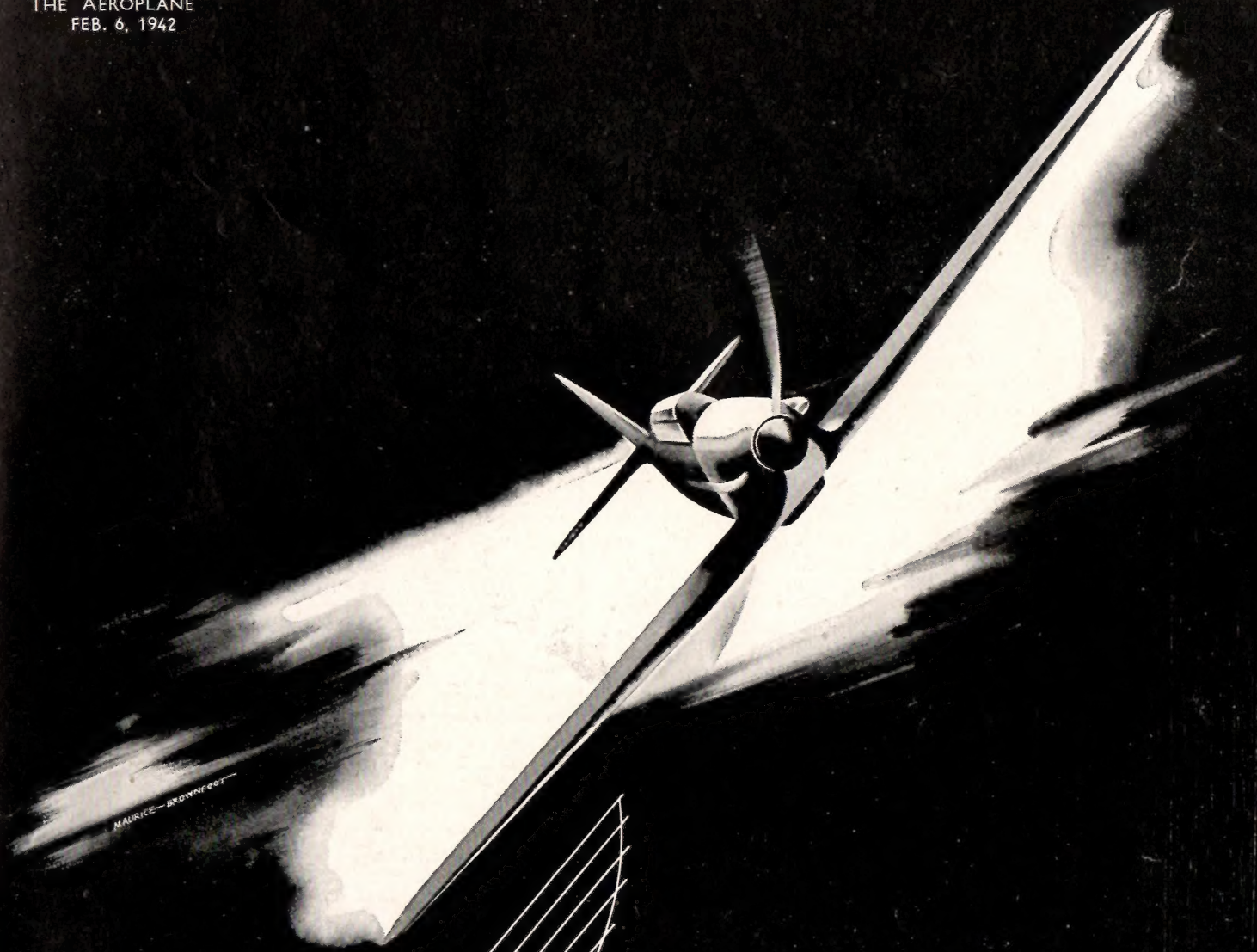
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